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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

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MINERAL MARKET REPORTS
MMS NO. 1473

METAL MINING IN UTAH 1946 - PRELIMINARY ANNUAL FIGURES

Plagued by strikes and handicapped by continued shortages of labor, metal mining in Utah in 1946 sank to the lowest level in recent years, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. Copper bore the brunt of the precipitous decline, output for the year being 52 percent below that in 1945; gold dropped 43 percent; silver 39, lead 33, and zinc 25 percent.

In spite of appreciable increases in average prices of all metals except gold in 1946, the value of the five metals produced in Utah during the year totaled only $55,427,860—38 percent below the 1945 value of $90,018,641 and nearly 56 percent less than the value of $124,562,540 for the peak war-year 1943. Of the State total value in 1946, copper contributed 63 percent, zinc 11, gold 10, lead 10, and silver less than 6 percent.

Based on reports by operators and receipts at smelters and mint offices for 10 months of the year and with November and December estimated from other sources of information, preliminary figures for 1946, with comparative figures for 1945, are given below.

Mine production of gold, silver, copper, lead, and zinc
in Utah, 1945-46, in terms of recovered metals

Metals	1945		1946	
	Quantity	Value	Quantity	Value
Gold, fine ounces.....	279,979	$9,799,265	158,500	$5,547,500
Silver, fine ounces...	6,106,545	4,342,432	3,720,000	3,005,760
Copper, pounds........	452,752,000	61,121,520	218,000,000	35,098,000
Lead, pounds..........	81,634,000	7,020,524	54,600,000	5,514,600
Zinc, pounds..........	67,260,000	7,734,900	50,500,000	6,262,000
Total value..........	-----------	90,018,641	-----------	55,427,860

The value of the metals produced in 1946 has been calculated at the following prices: Gold, $35 per fine ounce; silver $0.808 per fine ounce; copper, $0.161 per pound; lead, $0.101 per pound; and zinc, $0.124 per pound. The weighted average prices for base metals include bonus payments for overquota production.

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, Metal Economics Division, Economics and Statistics Branch.

Chief among the causes for the poor showing of the nonferrous metal mining industry in Utah in 1946 was the labor strike that went into effect January 21 and lasted nearly through June. Involved were about 5,000 mine, mill, and smelter workers employed by the Utah Copper Co., United States Smelting, Refining & Mining Co., and the American Smelting & Refining Co. As a result, during the five-months strike period, monthly output of copper dropped to about 2 percent of that in December 1945, gold to about 10 percent, and silver to less than 35 percent. Lead and zinc were less affected, lead output holding at near half the rate for December 1945 and zinc at 62 percent. A smaller strike, involving 80 men, affected the operations of the Park Utah Consolidated Mines Co. from March 2 to March 5.

Following the resumption of major operations in July, production mounted rapidly but was prevented from wiping out the strike-incurred losses largely because of a labor shortage of long standing, and little or no relief was in sight as the year ended. In an effort to step up production, the United States & Lark mine of the United States Smelting, Refining & Mining Co., in the West Mountain (Bingham) district began a six-day work week about the middle of November.

Few new mining and milling operations of consequence were opened during the year. Worthy of mention is the 1,500-ton tailings plant, completed in August, of the Pacific Bridge Co. at Park City, which uses 48 Humphreys spirals in treating old zinc-lead oxide and sulfide tailings. The resulting bulk zinc-lead concentrate is treated in the company new 1,000-ton flotation mill, which yields lead concentrate and zinc concentrate. Late in the year the Utah Copper Co. announced that it is adding $3,000,000 worth of new equipment to the electrical generating plant at Arthur.

Among the three leading districts, the West Mountain (Bingham) experienced the greatest loss in production, largely because of long work stoppages. Ore output dropped to less than half that in 1945. Metal production was affected accordingly, and the value of the five metals produced during the year declined 44 percent from that in 1945. Losses in the Tintic district were not so severe--zinc output increased slightly--yet the total value of the metals produced was 31 percent below that in 1945. Tonnage in the Park City district increased 39 percent, largely because of the activity of the Pacific Bridge Co., but the New Park Mining Co. also made a substantial increase in tonnage. District output of gold, copper, and zinc increased, although silver and lead recorded slight losses. The value of the metals produced in the district increased 8 percent over that in 1945. The West Mountain (Bingham) district produced 80 percent of the State total value in 1946, the Park City region 9 percent, the Tintic district 4 percent, and remaining districts 7 percent, most of which was derived from mines and a slag-fuming plant in Tooele County.

Further details on district and State production are shown in the table that follows.

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Mine production of gold, silver, copper, lead, and zinc in Utah and in the chief mining districts of Utah, 1945-46, in terms of recovered metal

District	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
West Mountain (Bingham) district							
1945.............	24,209,565	248,923	3,628,229	448,563,800	45,446,000	29,340,800	$79,131,715
1946.............	11,980,000	132,870	1,872,000	214,900,000	20,400,000	13,100,000	44,446,726
Park City region							
1945.............	154,609	13,822	1,033,830	740,800	17,831,500	14,870,000	4,562,505
1946.............	215,000	16,000	857,000	815,000	15,500,000	15,900,000	4,920,771
Tintic district							
1945.............	160,816	14,536	1,086,435	918,000	9,859,000	5,855,400	2,926,511
1946.............	102,000	6,700	428,000	200,000	6,700,000	6,000,000	2,033,224
Remaining districts							
1945.............	198,194	2,698	358,051	2,524,400	8,497,500	17,193,800	3,397,910
1946.............	203,000	2,930	563,000	2,085,000	12,000,000	15,500,000	4,027,139
Total, Utah							
1945.............	24,723,184	279,979	6,106,545	452,752,000	81,634,000	67,260,000	90,018,641
1946.............	12,500,000	158,500	3,720,000	218,000,000	54,600,000	50,500,000	55,427,860

MILLING and SMELTING

The custom milling capacity of the concentration mills in the Salt Lake Valley area remained at about 3,900 tons of ore per day. Of this total less than half was used in 1946. The largest custom mill in the area, the Midvale 1,700-ton concentrator of the United States Smelting, Refining & Mining Co., treated largely zinc-lead ore, most of which came from company-owned properties in the West Mountain (Bingham) district. The plant was closed during the labor strike from late January to late June. The 1,500-ton concentrator of the International Smelting & Refining Co. at Tooele operated at such times during the year as milling ore was available. The bulk of the ore continued to come from custom sources; the Park Utah Consolidated Mines Co. at Park City supplied most of the zinc-lead ore. The 700-ton concentrator of the Combined Metals Reduction Co. at Bauer operated throughout the year, principally on zinc-lead ore from company-owned or operated mines in Utah and Idaho. The Silver King Coalition 800-ton concentrator at Park City was active throughout the year and treated only zinc-lead-silver ore from the company mine. The 1,500-ton tailings plant of the Pacific Bridge Co. at Park City operated only in the last third of the year.

The Garfield copper smelter and the Murray lead smelter operated by the American Smelting & Refining Co., and the Midvale lead smelter of the United States Smelting, Refining & Mining Co. all were closed during the extended strike period, and the Tooele copper smelter of the International Smelting & Refining Co. remained idle throughout the year. The Garfield plant continued to operate largely on output from the Utah Copper Co.; the Tooele lead plant of the International Smelting & Refining Co. operated in conjunction with the company slag-fuming plant and treated zinc-lead ores and old slag, zinc-copper ores, lead concentrates, and zinc ores from company-owned operations as well as from custom sources; the Murray plant treated lead concentrates, lead ores, and siliceous ores chiefly from mines in Utah and Idaho; and the Midvale plant treated lead concentrates, lead ores, and siliceous ores mostly from its company-owned properties in Utah. The Tooele slag-fuming plant treated a total of about 178,000 tons of hot current slag, cold slag, and crude ore in 1946 compared with 175,562 tons in 1945; the resulting zinc fume (20,000 tons) averaged 72.7 percent zinc and was shipped to the National Zinc Co. at Bartlesville, Okla., and the lead fume (2,545 tons) averaged 47.4 percent lead and was re-treated at the Tooele lead smelter.

GOLD

After several years as the largest gold-producing State, Utah yielded to California, South Dakota and Alaska in 1946 and recorded the lowest gold output since 1934. The sharp decline of nearly 121,500 ounces from the yield in 1945 is attributed largely to labor strikes that seriously affected operations at the principal copper and zinc-lead mines. Copper ore continued to be the chief source of gold, supplying 80 percent of the State output; zinc-lead ore followed with 15 percent, and siliceous ores furnished most of the remainder.

The West Mountain (Bingham) district remained the leading State gold district in 1946, producing 84 percent of the State total. However, output was little more than half of that in 1945. The Park City region, which includes the Blue Ledge, Uintah, and Snake Creek districts, held second place and recorded an increase of 16 percent. Output in the Tintic district slumped considerably, largely because of the marked decline in production of siliceous ores.

Gold output from the Utah Copper Co. in 1946 was almost 45 percent less than in 1945 and from the United States & Lark group at Bingham (zinc-lead ore) 69 percent less. As a result, the United States & Lark group dropped to third place among State gold producers, and the New Park property at Keetley (zinc-lead ore) moved to second place following a 23-percent increase over the 1945 figure. Next to these three in order were the Tintic Bullion mine (gold ore) in the Tintic district, the Calumet mine (zinc-lead ore) in the Rush Valley district, the National Tunnel & Mines Co. (copper ore and zinc-lead ore) and the Butterfield group (zinc-lead ore) in the West Mountain (Bingham) district. These 7 properties produced 96 percent of the State total gold in 1946.

SILVER

The slump of about 2,387,000 ounces from the 1945 output of 6,106,545 ounces dropped Utah production of silver in 1946 to the lowest figure since 1880. Losses were particularly pronounced at the properties of the Utah Copper Co. and the United States Smelting, Refining & Mining Co. in the West Mountain (Bingham) district and at the Tintic Standard Mining Co. properties in the Tintic district. Silver output in the Park City region held up well largely because of the increase of 100,000 ounces from the property of the New Park Mining Co., although this gain was offset by a slight decline at the Park Utah Consolidated Mines Co. and a pronounced decrease at Silver King Coalition Mines Co. The Utah Copper Co. and the United States & Lark property remained in first and second place, respectively, among State silver producers, although output at the two properties was only half of that in 1945. Other important silver producers in 1946 in order of output were the New Park Mining Co., Park Utah Consolidated Mines Co., Chief Consolidated Mining Co., Calumet, Silver King Coalition Mines Co., Tintic Standard Mining Co., Butterfield, and National Tunnel & Mines Co. properties. These 10 properties supplied nearly 90 percent of the State total silver in 1946.

According to preliminary calculations, zinc-lead ore, zinc ore, and lead ore furnished 55 percent of the State silver output, copper ore 32 percent, and siliceous ore the remainder.

COPPER

The output of recoverable copper in Utah in 1946 was the lowest since 1935, the poor showing being largely attributable to the five-months strike at the Utah Copper Co. mine. Although production was cut in half from 1945, the mine led the Morenci mine of the Phelps Dodge Corp. in Arizona by a small margin and remained the Nation's largest copper producer. Other mines in Utah that yielded over a million pounds of recoverable copper in 1946 were the National Tunnel & Mines Co. property and the Columbia group of the Ohio Copper Co, both in the West Mountain (Bingham) district, and the Big Indian property of the Ohio Copper Co, in the La Sal district in San Juan County. These four properties produced nearly 99 percent of the State copper. Output at National Tunnel & Mines Co. declined appreciably from 1945, but production at both operations of the Ohio Copper Co. held virtually at the 1945 level. Copper ore treated in Utah in 1946 totaled 11,980,000 tons compared with 23,978,159 tons in 1945.

LEAD

Lead mining in Utah in 1946 remained in a better position than gold, silver, and copper mining, chiefly because a number of the larger lead producers felt but little the disastrous effects of work stoppages. Nevertheless, the industry on the whole was weak from chronic labor shortages, and production of the metal was at the lowest level since 1894. Outstanding in the slump were the United States & Lark and the Tintic Standard properties which together fell 27,000,000 pounds of lead below the 1945 figure; substantial decreases also were noted at a number of other important producers. Reversing the general trend, the Chief Consolidated Mining Co. registered a gain of over 1,000,000 pounds of metal, and the New Park Mining Co. nearly equaled this record.

The United States & Lark property of the United States Smelting, Refining & Mining Co. in the West Mountain (Bingham) district remained well in the lead among State lead producers. It was followed in order by the New Park Mining Co. in the Park City region, the Calumet mine in the Rush Valley district, the Chief Consolidated mine in the Tintic district, the Park Utah Consolidated Mines Co., and the Silver King Coalition Mines Co. properties in the Park City region, the Tooele slag-fuming plant in Tooele County, the Tintic Standard mine in the Tintic district, the Butterfield property, and the National Tunnel & Mines Co. property, both in the West Mountain (Bingham) district. These 10 operations contributed 82 percent of the State total lead in 1946.

ZINC

Of the five metals gold, silver, copper, lead, and zinc produced in Utah in 1946, only zinc output showed a decline as low as 25 percent from 1945. Although a few operations registered gains, the general trend of zinc was sharply downward, and output of the metal dropped to the smallest figure since 1924.

In the West Mountain (Bingham) district, for years the leading source of zinc in Utah, production was reduced to less than half that in 1945, permitting the Park City region to advance to first place. The chief cause of the severe drop in the West Mountain (Bingham) district was the five-months strike at the United States & Lark property of the United States Smelting, Refining & Mining Co., but in spite of this, for the year as a whole, the property remained the State leading zinc producer. In the Park City region, the New Park Mining Co. made a gain of 1,000,000 pounds of zinc over the 1945 output, but this was more than offset by decreases at the operations of the Park Utah Consolidated Mines Co. and the Silver King Coalition Mines Co. However, the Pacific Bridge Co., operating in the last third of the year, rapidly became a major producer of zinc, and its output was large enough to raise the total for the district a million pounds above the 1945 figure. In the Tintic district, the Chief Consolidated Mining Co., virtually the only zinc producer in the district, held close to its 1945 level. The Tooele slag-fuming plant recorded a slight drop from 1945 but remained the second most important source of zinc in the State. The plant treated a total of 178,000 tons of zinc-bearing slag in 1946, but only that zinc recovered from about 80,000 tons is credited to Utah.

Following the United States & Lark property and the Tooele slag-fuming plant, the leading producers of zinc in Utah in 1946 were the New Park mine, the Chief Consolidated mine, the Park Utah Consolidated property, the Calumet mine in the Rush Valley district, the Silver King Coalition mine, and the property of the Pacific Bridge Co. These 8 properties supplied 92 percent of the State total output of zinc.

Mine production of gold, silver, copper, lead, and zinc in Utah in 1946, by months, in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January.........	15,635	373,000	21,860,000	5,400,000	4,950,000
February........	1,530	143,000	600,000	2,950,000	3,200,000
March...........	1,700	165,000	740,000	3,400,000	3,730,000
April...........	2,100	160,000	750,000	3,250,000	3,540,000
May.............	2,825	162,000	740,000	3,400,000	3,300,000
June............	2,750	143,500	610,000	3,020,000	3,160,000
July............	16,135	366,000	24,600,000	4,900,000	3,800,000
August..........	20,125	418,500	27,450,000	5,880,000	4,660,000
September.......	23,500	440,000	34,800,000	5,600,000	4,800,000
October.........	23,800	450,000	35,400,000	5,600,000	5,100,000
November........	23,600	439,000	34,850,000	5,400,000	5,060,000
December........	24,800	460,000	35,600,000	5,800,000	5,200,000
	158,500	3,720,000	218,000,000	54,600,000	50,500,000
Total 1945......	279,979	6,106,545	452,752,000	81,634,000	67,260,000

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Mineral Market Reports
MMS No. 1474

METAL MINING IN WASHINGTON, 1946 - PRELIMINARY ANNUAL FIGURES

In the production of gold, silver, copper, lead, and zinc in Washington in 1946 the output of each metal declined from that in 1945, according to the Salt Lake Office of the Bureau of Mines, United States Department of the Interior. Lead made the poorest showing and slumped 21 percent in quantity; gold, silver, copper, and zinc held steadier— gold decreased 6 percent, silver 8 percent, copper 9 percent, and zinc less than 1 percent. Because of higher average prices in 1946 for all metals except gold, the total value of the five metals increased 3 percent over the $7,140,242 in 1945 to $7,319,380 in 1946; zinc contributed nearly 40 percent; gold 26, copper 23, lead 8, and silver nearly 3 percent.

Based on reports by operators and on receipts at smelters and mints covering 10 months of the year and with November and December estimated from other sources of information, preliminary figures for 1946, with comparative figures for 1945, are given in the following table.

Mine production of gold, silver, copper, lead, and zinc in Washington 1945-46, in terms of recovered metals

Metals	1945		1946	
	Quantity	Value	Quantity	Value
Gold—fine ounces........	57,860	$2,025,100	54,500	$1,907,500
Silver—fine ounces........	281,444	200,138	260,000	210,080
Copper—pounds........	11,642,000	1,571,670	10,600,000	1,706,600
Lead—pounds...	7,604,000	653,944	6,000,000	606,000
Zinc—pounds...	23,386,000	2,689,390	23,300,000	2,889,200
Total Value....	———	7,140,242	———	7,319,380

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, Metal Economics Division, Economics and Statistics Branch.

The value of the metals produced in 1946 has been calculated at the following prices: Gold, $35 an ounce for fine gold; silver, $0.808 an ounce for fine silver; copper, $0.161 per pound; lead, $0.101, and zinc, $0.124. The weighted average prices for base metals include bonus payments for overquota production.

Although the record of the mining industry in Washington in 1946, except in lead production, compared favorably with that in 1945, the industry did not operate free of reverses. Late in June a strike that lasted two months was called at the operations of the American Zinc, Lead & Smelting Co. and the Metaline Mining & Leasing Co. in the Metaline district. As a result, it is estimated that some 800,000 pounds of lead and 2,000,000 pounds of zinc were lost. In addition to the strike at these operations, virtually all mines in Washington continued to be handicapped by labor shortages, and the instability of the price structure during a part of the summer was a disturbing factor at some operations. Even though the trend in ore output was downward, a few mines pushed their tonnage above the 1945 level, among them the Kaaba mine of the Kaaba-Texas Mining Co. and the Deep Creek mine of the Jamison-Higginbotham Mining Co.

Chelan and Pend Oreille Counties continued in 1946 to dominate metal mining in Washington and were the only counties to exceed $1,000,000 in total value of the five metals produced. The two counties together produced 81 percent of the State total value in 1946, 49 percent coming from Chelan County and 32 percent from Pend Oreille County.

GOLD

The decrease of nearly 3,400 ounces in the Washington output of recoverable gold in 1946, compared with 1945, resulted largely from a reduced tonnage of zinc-copper ore from the Holden property of the Howe Sound Co. in Chelan County; the property, however, remained the State leading gold producer. The only other important gold producer during the year was the Knob Hill mine in Ferry County, which fell short of its 1945 gold output by a few hundred ounces. These two properties contributed 96 percent of the State total gold. The output from placer mines in

1946 remained small.

SILVER

As with gold, the two leading silver producers in Washington in 1946 were the Holden and Knob Hill mines, but each recorded a decrease compared with 1945—about 14,000 ounces less for the Holden mine and over 20,000 ounces for the Knob Hill mine. The Kaaba mine in Okanogan County, third in importance, doubled its 1945 output in 1946. These three properties produced 93 percent of the State total silver. About 76 percent of the total silver was derived from zinc-copper ore treated by flotation and siliceous gold ore treated by cyanidation-concentration; the remainder was recovered principally from zinc-lead ore treated by flotation.

COPPER

For the sixth successive year, copper output in Washington declined and in 1946 was only 55 percent of that in the peak year 1940. As in previous years, virtually all of the State copper came from zinc-copper ore treated by flotation from the Holden mine in Chelan County. Ore output from the mine decreased from 617,100 tons in 1945 to about 563,000 tons in 1946; the ore was slightly lower in copper content than in 1945.

LEAD

The decline of 1,600,000 pounds of recoverable lead in Washington in 1946 was due mainly to a reduced tonnage of zinc-lead ore from the Metaline district in Pend Oreille County and to a lower lead content of the ore treated. Ore production for the district in 1946 was about 11,000 tons less than in 1945, largely attributable to the two-months strike at the operations of the American Zinc, Lead & Smelting Co. and the Metaline Mining & Leasing Co. In addition to reduced tonnages, the ore produced by the two companies had a considerably lower lead content than in 1945. The Pend Oreille Mines & Metals Co. operated virtually at its 1945 level, but the content of recoverable lead was slightly higher in 1946 than in 1945. The Grandview mine of the American Zinc, Lead & Smelting Co. was the largest lead producer in Washington in 1946, followed by the properties of the Pend Oreille Mines & Metals Co. and the

Metaline Mining & Leasing Co., all in Pend Oreille County, and the Kaaba mine of the Kaaba-Texas Mining Co. in Okanogan County, which nearly doubled its 1945 output of lead. These four properties produced about 90 percent of the State total lead in 1946.

ZINC

Despite a good increase in the output of zinc in Washington during the last quarter of 1946, the total output of the State for the year declined slightly (86,000 pounds) from that in 1945, to 23,300,000 pounds in 1946. Of the five major producers, only the Deep Creek mine of the Jamison-Higginbotham Mining Co. in Stevens County increased its tonnage of ore over that in 1945, but the Pend Oreille Mines & Metals Co. and the American Zinc, Lead & Smelting Co. in the Metaline district recorded increased yields of recoverable metal owing to a greater content of zinc in the ores treated. Output of zinc declined at the properties of the Metaline Mining & Leasing Co. in the Metaline district and the Howe Sound Co. in Chelan County. In order of zinc output, the leading producers in Washington in 1946 were the American Zinc, Lead & Smelting Co., the Pend Oreille Mines & Metals Co., the Howe Sound Co., the Jamison-Higginbotham Mining Co., and the Metaline Mining & Leasing Co. These five companies produced nearly 99 percent of the State total zinc in 1946.

Mine production of gold, silver, copper, lead, and zinc in Washington, in 1946, by months, in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January...	5,235	19,775	1,000,000	530,000	1,710,000
February..	5,415	15,700	800,000	520,000	1,920,000
March.....	5,400	24,075	950,000	600,000	2,110,000
April.....	5,035	23,700	1,020,000	580,000	1,950,000
May.......	4,330	20,200	890,000	560,000	2,250,000
June......	4,665	22,250	900,000	400,000	2,050,000
July......	4,200	23,600	800,000	240,000	1,130,000
August....	3,810	20,700	900,000	230,000	1,300,000
September.	4,060	22,000	790,000	540,000	2,200,000
October...	4,150	23,000	880,000	600,000	2,330,000
November..	4,100	22,500	800,000	600,000	2,100,000
December..	4,100	22,500	870,000	600,000	2,250,000
	54,500	260,000	10,600,000	6,000,000	23,300,000
Total 1945	57,860	281,444	11,642,000	7,604,000	23,386,000

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MINERAL MARKET REPORT
M. M. S. No. 1475

METAL MINING IN TEXAS, 1946 - PRELIMINARY ANNUAL FIGURES

The first zinc concentrates to be marketed from a Texas mine were shipped by the Clark Mining Co. from the Bonanza mine in 1946, according to the Denver office of the Bureau of Mines, United States Department of the Interior. This shipment marked the first mine production of zinc in Texas since 1917.

During 1946 mines in Texas yielded (in terms of recoverable metals) 10 fine ounces of gold, 45,078 fine ounces of silver, 8,000 pounds of copper, 110,000 pounds of lead, and 182,000 pounds of zinc, compared with 23,265 fine ounces of silver and 110,000 pounds of copper in 1945. No gold, lead, or zinc was recovered from ores mined in Texas in 1945 or 1944. The preliminary figures on 1946 mine output are based on 10 months' actual mine production plus an estimate of the output anticipated by operators in November and December.

At the average prices used by the Bureau of Mines, as shown below the calculated gross value of the output of these metals in 1946 was: Gold $350, silver $36,423, copper $1,288, lead $11,110, and zinc $22,568, a total of $71,739. In 1945 the value of silver was $16,544 and copper $14,850, a total of $31,394. The price of gold, fixed by the United States Government, remained at $35 per fine ounce throughout 1946, and the price of domestic-mined silver was $0.711+ from January 1 through June 30, when it was raised by Act of Congress to $0.905 per fine ounce. The average weighted yearly price per pound, including bonus payments for over-quota production, of copper advanced from $0.135 to $0.161, lead from $0.086 to $0.101, and zinc from $0.115 to $0.124.

Four metal mines made shipments of ore or concentrates in Texas in 1946. M. F. Drunzer shipped copper ore from the Black Shaft mine in Hudspeth County and dry silver ore from the Presidio mine in Presidio County. The Clark Mining Co. during the latter half of the year completed and began operation of a selective-flotation mill and treated ore from the Bonanza mine in the Quitman Mountains, Hudspeth County. R. I. Carr made a shipment of dry gold-silver ore from his mine in Presidio County.

In 1946, two horizontal-retort zinc smelters and one electrolytic zinc smelter, one copper smelter, one lead smelter, and one copper refinery were in operation in Texas. The American Smelting & Refining Co. operated its copper and its lead smelters in El Paso throughout the year, except for the period February 5 to June 17 when the workers were on strike. The company horizontal-retort zinc smelter at Amarillo was operated continuously at about half capacity during the year; its electrolytic zinc smelter at Corpus Christi was operated continuously throughout the year.

Prepared by S. A. Gustavson, Denver Office, Metal Economics Division, Economics and Statistics Branch.

The American Zinc Co. of Illinois operated its gas-fired horizontal-retort zinc smelter at Dumas continuously at about half capacity during the year on concentrates from Arizona, Colorado, Idaho, New Mexico, Utah, and Mexico.

The Phelps Dodge Corporation Nichols electrolytic copper refinery at El Paso continued to treat blister copper anodes cast at the corporation smelters in Arizona throughout 1946, except for the period March 4 to July 1, when the plant was closed because of a strike of its employees.

Mine production of gold, silver, copper, lead, and zinc in Texas, 1946, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January	-	18	4,000	-	-
February - June	-	-	-	-	-
July	1	9,056	-	12,000	22,000
August	3	7,281	4,000	26,000	-
September	-	12,295	-	6,000	38,000
October	2	5,328	-	20,000	40,000
November	2	5,600	-	22,000	42,000
December	2	5,500	-	24,000	40,000
	10	45,078	8,000	110,000	182,000
Total, 1945	-	23,265	110,000	-	-

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary
R. R. SAYERS, Director

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For Release January 9, 1947.

MINERAL MARKET REPORTS
MMS NO. 1476

METAL MINING IN WYOMING, 1946 - PRELIMINARY ANNUAL FIGURES

Metal mines in Wyoming yielded (in terms of recoverable metals) 105 fine ounces of gold and 26 fine ounces of silver, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. There was no recoverable copper, lead, or zinc produced from mines in Wyoming in 1946. These preliminary figures are based on 11 months' actual mine production with December calculated from anticipated receipts at smelters. In 1945 production was 2 fine ounces of gold, 31 ounces of silver, and 6,000 pounds of lead.

At average prices used by the Bureau of Mines, as shown below, the calculated gross value of the output of these metals in 1946 was: Gold $3,675 and silver $21, a total of $3,696. In 1945 the gross value was: Gold $70, silver $22, and lead $516, a total of $608.

The price of gold in 1946 remained fixed by the United States Government at $35 per fine ounce and the price of domestic-mined silver was $0.711+ from January 1 through June 30, when it was raised by Act of Congress to $0.905 per fine ounce. The average weighted price of silver for 1946 was $0.808.

Albany County.--One lode mine and two placers operated intermittently in Albany County in 1946. They were the Silver King No. 1 claim operated by Silver King Mining, Inc., and the McClellan claim operated by the Medicine Bow Mining Co. and Triangle placer operated by J. C. Neudigate.

Fremont County.--Two lode mines the Duncan operated by J. E. Vanderwalker & Co. and the Mary B operated by J. Don Birch, were in production in Fremont County the latter half of 1946.

Mine production of gold and silver in Wyoming, 1946, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Lead (pounds)
January-June	-------	-------	--------
July	3	-------	--------
August	5	1	--------
September	83	22	--------
October	9	2	--------
November	5	1	--------
December	-------	-------	--------
	105	26	--------
Total, 1945	2	31	6,000

Prepared by S. A. Gustavson, Denver Office, Metal Economics Division, Economics and Statistics Branch.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

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MINERAL MARKET REPORTS
MMS NO. 1477

METAL MINING IN SOUTH DAKOTA, 1946 - PRELIMINARY ANNUAL FIGURES

Mines in South Dakota yielded (in terms of recoverable metals) 311,600 fine ounces of gold and 87,448 fine ounces of silver in 1946, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. No copper, lead, or zinc was produced in the State in 1946. These figures are based on 11 months' actual mine production with December production calculated from reports by mine operators and refineries of anticipated shipments and receipts. Production in 1945 was 55,948 fine ounces of gold and 26,564 fine ounces of silver.

At the average prices used by the Bureau of Mines, as shown below, the calculated gross value of the output of these metals in 1946 was: Gold $10,906,000 and silver $70,658, a total of $10,976,658. In 1945 the total value was $1,977,070, of which $1,958,180 was in gold and $18,890 in silver. The price of gold, fixed by the United States Government, remained at $35 a fine ounce throughout 1946 and the price of domestic-mined silver was $0.711+ from January 1 through June 30, when it was raised by Act of Congress to $0.905; the average weighted price for silver for 1946 was $0.808 per fine ounce.

During 1946 only two mines producing gold, silver, copper, lead, or zinc were in continuous operation in South Dakota. The Homestake Mining Co. operated its mine and mill throughout 1946, but reached only slightly over 50 percent of the pre-war production, chiefly because of the shortage of skilled labor; the estimated production for 1946 was 787,000 tons of ore yielding 298,000 fine ounces of gold and 54,500 fine ounces of silver.

Prepared by S. A. Gustavson, Denver Office, Metal Economics Division, Economics and Statistics Branch.

The Bald Mountain Mining Co. at Trojan, Lawrence County, operated its group of mines and 350-ton all-sliming counter-current-cyanidation plant throughout the year. This company also operated at about 50 percent of the pre-war production rate. Output in 1946 was estimated at 13,584 fine ounces of gold and 32,889 fine ounces of silver.

The Belle Eldridge Gold Mines, Inc., at Deadwood made a small shipment of gold bullion from its Belle Eldridge properties during the latter part of the year.

Mine production of gold and silver in South Dakota, 1946, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)
January	22,584	8,800
February	20,041	7,396
March	25,574	8,257
April	24,187	7,810
May	30,160	6,613
June	28,690	6,844
July	28,328	7,408
August	26,266	5,800
September	25,918	5,728
October	26,302	7,222
November	26,550	7,770
December	27,000	7,800
	311,600	87,448
Total, 1945	55,948	26,564

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Mineral Market Report
MMS No. 1478

METAL MINING IN THE EASTERN STATES, 1946 - PRELIMINARY ANNUAL FIGURES

The mine production of zinc in the Eastern States in 1946 decreased 11 percent in quantity for the third consecutive year and reached the lowest level since 1933, according to the Joplin Office of the Bureau of Mines, United States Department of the Interior. Labor strikes shut down 5 mines in Tennessee for 3 months and 2 mines in New Jersey for 2 months, causing large decreases from 1945 in output from these two States. In New York the zinc output increased 32 percent and in Virginia 5 percent. Lead production showed a small tonnage increase in all three contributing States; the New York and Virginia outputs were derived from zinc-lead sulfide ore and the Tennessee output from lead carbonate. Copper production decreased in Pennsylvania but increased sharply in Vermont and slightly in Tennessee, making a small over-all gain over 1945. The output of gold and silver, largely a byproduct of the mining of other metals, again decreased.

Preliminary figures for 1946, based on 11 months' output already reported by mine operators, with December estimated, show a total production (in terms of recoverable metals) of 1,554 fine ounces of gold, 78,771 fine ounces of silver, 13,000 short tons of copper, 5,550 short tons of lead, and 138,315 short tons of zinc. These figures compare with outputs in 1945 of 1,857 ounces of gold, 81,983 ounces of silver, 12,455 tons of copper, 5,159 tons of lead, and 156,269 tons of zinc, and show decreases for 1946 of 303 ounces of gold, 3,212 ounces of silver, and 17,954 tons of zinc and increases of 545 tons of copper and 391 tons of lead.

The prices used herein for calculating the value of the production in 1946 are the average Government prices of $35 per fine ounce of gold and $0.808 per fine ounce of silver; and average weighted yearly prices (including estimates for Government premiums) of $0.161 per pound of copper, $0.101 per pound of lead, and $0.124 per pound of zinc. In 1945 the price used for gold was $35, silver $0.711 plus, copper $0.135, lead $0.086, and zinc other than New Jersey $0.115.

The value of the New Jersey zinc output, which is the value of zinc recoverable as metal and oxide after transportation, smelting, and manufacturing charges are added, is not yet available for 1946; in 1945 it was $14,299,032. The value of the zinc outputs in New York, Tennessee, and Virginia totaled $18,368,120 in 1946 compared with $17,221,710 in 1945. The value of the Eastern States output of gold in 1946 and 1945, respectively, was $54,390 and $64,995, silver $63,647 and $58,299, copper $4,186,000 and $3,362,850, and lead $1,121,100 and $887,348—a total for the 4 metals of $5,425,137 in 1946 and $4,373,492 in 1945.

Prepared by A. J. Martin, Joplin (Missouri) Office, Metal Economics Division, Economics and Statistics Branch.

Mine production of gold, silver, copper, lead, and zinc in the Eastern States, 1945-46, in terms of recovered metals

State	Gold		Silver		Copper		Lead		Zinc		Total Value
	Fine ounces	Value	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	
Alabama.....	1	$35	—	—	—	—	—	—	—	—	$35
Georgia.....	21	735	—	—	—	—	—	—	—	—	735
New Jersey..	—	—	—	—	—	—	—	—	64,250	(a)	(a)
New York....	—	—	15,420	$12,459	—	—	1,000	$202,000	32,900	$8,159,200	8,373,659
Pennsylvania	1,271	44,485	8,564	6,920	(b)	(b)	—	—	—	—	c/ 51,405
Tennessee...	95	3,325	18,016	14,557	b/13,000	b/$4,186,000	170	34,340	24,240	6,011,520	d/10,249,742
Vermont.....	166	5,810	36,771	29,711	(b)	(b)	—	—	—	—	c/ 35,521
Virginia....	—	—	—	—	—	—	4,380	884,760	16,925	4,197,400	5,082,160
Total: 1946	1,554	54,390	78,771	63,647	13,000	4,186,000	5,550	1,121,100	138,315	e/18,368,120	e/23,793,257
1945	f/1,857	64,995	81,983	58,299	12,455	3,362,850	5,159	887,348	156,269	g/31,520,742	g/35,894,234

a/ Figures for value of New Jersey zinc not yet available.

b/ Pennsylvania and Vermont included under Tennessee; Bureau of Mines not at liberty to publish separate figures for Pennsylvania and Tennessee.

c/ Excludes value of copper, which is included under Tennessee.

d/ Includes also value of copper from Pennsylvania and Vermont.

e/ Excludes value of zinc from New Jersey, figures for which are not yet available.

f/ No production from Georgia in 1945.

g/ Includes value of zinc from New Jersey ($14,299,032), which represents estimated smelting value of recoverable zinc content of ore after freight, haulage, smelting, and manufacturing charges are added.

Gold

The only output of gold reported from straight gold mines in the Eastern States in 1946 was 21 ounces recovered from placer mines in Dawson and Lumpkin Counties, Ga., and 1 ounce from old tailings at the Hog Mountain mine in Tallapoosa County, Ala. The principal gold mines in operation when the war-time shutdown occurred in 1942 were the Haile in Lancaster County, S. C., and the Condor (old Howie) in Union County, N. C., both equipped with cyanidation mills. Reopening of these mines is being held in abeyance because of high wage levels and scarcity of labor. Gold recovered as a byproduct of the mining of other metals comprised 1,271 ounces from iron (magnetite-pyrite-chalcopyrite) ore from Pennsylvania, 166 ounces from copper ore from Vermont, and 95 ounces from copper-iron-zinc ore from Tennessee.

Silver

The silver output of the Eastern States in 1946 comprised 54,787 ounces recovered from copper and copper-iron-zinc ore from Vermont and Tennessee, 15,420 ounces from zinc-lead ore from New York, and 8,564 ounces from magnetite-pyrite-chalcopyrite ore from Pennsylvania.

Copper

The principal producer of copper in the Eastern States in 1946 continued to be the Tennessee Copper Co., which operated 4 mines, 2 flotation mills (combined capacity 2,700 tons daily), a smelter, a copper sulfate plant, and 2 sulfuric acid plants in the Ducktown-Copperhill district of Tennessee. The ore contains heavy sulfides of iron, copper, and zinc. Some of the ore was smelted direct in a blast furnace, but most of it was concentrated. The copper concentrates were smelted in a reverberatory furnace. The iron concentrates were used in making sulfuric acid and also yielded iron sinter, which was sold to iron and steel plants. The zinc concentrates were sold to zinc smelters.

In Vermont the Elizabeth mine in Orange County, equipped with a 500-ton flotation mill, was operated continuously by the Vermont Copper Co., Inc., and produced 62 percent more copper than in 1945.

In Pennsylvania the Bethlehem Steel Co. continued to recover copper as a byproduct from iron (magnetite-pyrite-chalcopyrite) ore from the Cornwall mine in Lancaster County.

Lead and Zinc

Zinc and zinc-lead ores milled in the Eastern States in 1946 totaled about 2,116,000 tons compared with 2,619,943 tons in 1945. The figures for both years include a small tonnage of lead carbonate ore.

New Jersey.— Although the zinc mines in New Jersey were idle from June 17 to August 17 because of the labor strike, the State continued in 1946 to be the leading producer of zinc in the Eastern States and ranked third in the United States. The State output of recoverable zinc as metal or in oxide was approximately 64,250 tons compared with 81,392 tons in 1945. The producing mines in both years were the Mine Hill at Franklin and the Sterling Hill at Ogdensburg, Sussex County.

New York.— The output of recoverable zinc in New York increased from 24,978 tons in 1945 to 32,900 tons in 1946 and lead from 862 to 1,000 tons. The mines are in St. Lawrence County east and southeast of Gouverneur. The principal producers are the Balmat and Ewards mines of the St. Joseph Lead Co. The Balmat ore contains zinc, iron, and lead sulfides, with some silver associated with the lead. The metallurgical problem at Balmat and flow sheets of the 1,200-ton flotation mill are described by James Casale in an article in the November 1946 issue of the Engineering and Mining Journal. The Edwards mine yields straight zinc ore and is equipped with a 600-ton flotation mill. The Universal Exploration Co. Hyatt mine, equipped with a 200-ton flotation mill, increased output in 1946 and was a sizable producer of zinc.

Tennessee.— Zinc production in Tennessee decreased from 33,824 tons (recoverable metal) in 1945 to 24,240 tons in 1946. The decrease was due in part to a labor strike lasting from February 2 to May 4 at the mines of the American Zinc Co. of Tennessee. Another contributing factor was exhaustion in January of the company Shallow Ore open-pit ore body, an important source of zinc since it was opened in October 1943. Other producing mines of the American Zinc Co. were the Grasselli, Jarnagin, Mascot No. 2, Mascot Graves, and Mossy Creek. The ore from all six mines was concentrated in the 4,000-ton mill at the Mascot No. 2 mine.

The Universal Exploration Co. continued to operate its Davis-Bible group of mines and 800-ton flotation mill near Jefferson City. The concentrates produced averaged 64.35 percent zinc. In November the company began shipping ore from its Straight Creek mine near New Tazewell, Claiborne County. The Tennessee Zinc Co. operated the Embreeville group in Washington and Unicoi Counties and shipped both zinc carbonate and lead carbonate ores. In Cannon County the Hoover mine east of Murfreesboro produced about a car of 58-percent zinc concentrates monthly. In Polk County the Tennessee Copper Co. recovered zinc concentrates from copper-iron-zinc ore.

Virginia.— The output of recoverable zinc in Virginia was approximately 16,925 tons and lead 4,380 tons in 1946 compared with 16,075 and 4,243 tons, respectively, in 1945. The Austinville mine in Wythe County, which has been in continuous operation since 1924, operated at a slightly higher average monthly rate than in 1945; the ore is treated in the 2,000-ton flotation mill at the mine.

Mine production of gold, silver, copper, lead, and zinc in the Eastern States, 1946, by months, 1/ in terms of recovered metals

Month	Gold (Fine ounces)	Silver (Fine ounces)	Copper (Short tons)	Lead (Short tons)	Zinc (Short tons)
January	154	7,821	1,102	497	13,483
February	63	7,418	797	568	11,338
March	173	8,436	1,088	671	12,607
April	105	8,081	1,088	684	12,563
May	120	10,629	1,217	264	12,773
June	136	8,326	1,137	522	9,202
July	110	5,190	1,052	438	7,042
August	132	4,379	1,097	487	9,055
September	133	4,922	1,112	405	12,070
October	139	4,791	1,125	402	13,310
November	144	4,380	1,091	309	12,301
December	145	4,398	1,094	303	12,571
	1,554	78,771	13,000	5,550	138,315
Total 1945	1,857	81,983	12,455	5,159	156,269

1/ Revised figures.

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UNITED STATES DEPARTMENT OF THE INTERIOR
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MINERAL MARKET REPORTS
M.S NO. 1479

METAL MINING IN OREGON, 1946 - PRELIMINARY ANNUAL FIGURES

Production of gold in Oregon in 1946 was four times the 1945 output largely owing to dredging operations, but the total was only 16 percent of the all-time record set in 1940, according to preliminary figures prepared by the San Francisco Office of the Bureau of Mines, United States Department of the Interior. Silver production was less than in 1945, and copper and lead output remained extremely low. No zinc production was reported. These figures, which are in terms of recoverable metal, show gold production as 18,529 fine ounces, silver 5,890 fine ounces, copper 8,000 pounds, and lead 6,000 pounds. Production in 1945 was 4,467 fine ounces of gold, 10,461 fine ounces of silver, 2,000 pounds of copper, 2,000 pounds of lead, and 2,000 pounds of zinc. The value of the four metals in 1946 was $655,168 compared with $164,456 for five metals produced in 1945, an increase of 298 percent.

The average prices used by the Bureau of Mines in calculating the gross values of the outputs of the metals were: Gold, $35 per fine ounce in 1945 and 1946; silver, $0.711+ per fine ounce in 1945 and $0.808 in 1946; copper, $0.135 per pound in 1945 and $0.161 in 1946; lead, $0.086 per pound in 1945 and $0.101 in 1946; and zinc, $0.115 per pound in 1945.

Gold output in 1946, though several times greater than the production in 1945, was still far short of the production in the record year 1940 of 113,402 fine ounces valued at $3,969,070. The major proportion of production came from placers, largely worked by connected-bucket dredges, but there was an increasing number of dragline dredges in operation. Both placer and lode mines continued to be faced with increasing costs and the problem of obtaining labor and supplies. Because of these factors and also as a result of the smelter strike during the first half of 1946, the relatively minor contribution to output made by lode mines did not appear until late in the year. The principal gold producer in 1946 was the Sumpter Valley Dredging Co. which operated a connected-bucket dredge in the Sumpter district, Baker County. Other connected-bucket dredge operators were the Western Gold Dredging Co., Canyon district, Grant County, Porter and Co., Baker County, and the Sunshine Mining Co. (Burnt River Division), Greenhorn district, Baker County.

Production of silver, copper, and lead continued to be small in 1946. Silver output is estimated at 5,890 fine ounces valued at $4,759 compared with 10,461 fine ounces valued at $7,439 in 1945. The principal silver producer in 1946 was the Sumpter Valley Dredging Co.; the metal was recovered as a by-product of the gold dredging operations. Copper production for 1946 was only 8,000 pounds valued at $1,288 compared with 2,000 pounds valued at $270 in 1945; the metal was recovered from several shipments of ore made to a copper smelter. Lead production increased in 1946 to 6,000 pounds valued at $606 from 2,000 pounds in 1945 valued at $172. There was no recorded production of zinc in 1946; production of 2,000 pounds in 1945 valued at $230 was the first since 1937.

Prepared by Alfred L. Ransome, San Francisco Office, Metal Economics Division, Economics and Statistics Branch.

Mine production of gold, silver, copper and lead in Oregon, in 1946, by months, in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January...	680	135	-	-	-
February..	509	85	-	-	-
March.....	1,720	290	-	-	-
April.....	1,120	150	-	-	-
May.......	2,000	1,380	(1)	(1)	-
June......	2,500	500	-	-	-
July......	1,800	400	(1)	(1)	-
August....	2,100	550	(1)	(1)	-
September.	1,700	1,500	3	1	-
October...	1,500	350	-	-	-
November..	1,600	325	1	1	-
December..	1,300	225	-	-	-
	18,529	5,890	4	3	-
Total 1945	4,467	10,461	1	1	1

1/ Less than half a ton (recoverable content).

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UNITED STATES DEPARTMENT OF THE INTERIOR

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MINERAL MARKET REPORTS
MMS NO. 1480

METAL MINING IN COLORADO, 1946 - PRELIMINARY ANNUAL FIGURES

Despite a moderate decline in the outputs of silver, lead and zinc, the total gross value of gold, silver, copper, lead, and zinc produced from Colorado metal mines in 1946 increased 13 percent over 1945, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. Although this increase can be partially attributed to gains in the average yearly prices of all metals except gold, a substantial portion of the increase was due to a 36-percent rise in gold output.

In 1946 Colorado metal mines yielded (in terms of recoverable metals) 137,210 fine ounces of gold, 2,167,500 fine ounces of silver, 2,984,000 pounds of copper, 33,746,000 pounds of lead, and 67,636,000 pounds of zinc. These preliminary figures are based on 11 months actual mine production with December production calculated from reports by mine operators, refineries (including the Denver Mint), and smelters of anticipated shipments and receipts.

Production in 1945 was 100,935 fine ounces of gold, 2,226,780 fine ounces of silver, 2,970,000 pounds of copper, 34,088,000 pounds of lead, and 71,546,000 pounds of zinc. These figures indicate production increases in 1946 of 36,275 ounces of gold (36 percent) and 14,000 pounds of copper ($\frac{1}{2}$ of 1 percent), and decreases of 59,280 ounces of silver (3 percent), 342,000 pounds of lead (1 percent), and 3,910,000 pounds of zinc (5 percent) from 1945.

At average prices used by the Bureau of Mines, as shown below, the calculated gross value of the output of these metals in 1946 was: Gold $4,802,350, silver $1,751,340, copper $480,424, lead $3,408,346, and zinc $8,386,864, a total value of $18,829,324. In 1945 the total value was $16,676,521, indicating an increase in 1946 of $2,152,803 (13 percent).

The price of gold fixed by the United States Government remained at $35 per fine ounce throughout 1946, and the price of domestic-mined silver was $0.711+ from January 1 through June 30, when it was raised by Act of Congress to $0.905 per fine ounce; the average weighted yearly price per fine ounce was $0.808. The average weighted yearly price per pound, including bonus payments for over-quota production, of copper advanced from $0.135 in 1945 to $0.161 in 1946, lead from $0.086 to $0.101, and zinc from $0.115 to $0.124.

Adams County.--Gold and silver were recovered as byproducts from gravel washing plants by W. B. Kerkling from the Brannan Sand & Gravel Co. pit No. 10 near Lakewood, and by Kerkling & Slensker from the Superior Sand & Gravel Co. pit near Lakewood.

Prepared by S. A. Gustavson, Denver Office, Metal Economics Division, Economics and Statistics Branch.

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1946 1/ by counties, in terms of recovered or recoverable metals

County	Gold 2/		Silver 3/		Copper	
	Fine ounces	Value	Fine ounces	Value	Pounds	Value
Adams	620	$21,700	94	$76	—	—
Boulder	2,725	95,375	11,051	8,929	6,000	$966
Chaffee	404	14,140	16,619	13,428	75,000	12,075
Clear Creek	3,412	119,420	77,520	62,636	22,000	3,542
Costilla	—	—	—	—	—	—
Custer	30	1,050	22,663	18,312	7,000	1,127
Dolores	182	6,370	164,833	133,185	184,000	29,624
Douglas	1	35	—	—	—	—
Eagle	174	6,090	67,000	54,136	16,000	2,576
Fremont	13	455	1,688	1,364	25,000	4,025
Garfield	2	70	1,850	1,495	—	—
Gilpin	344	12,040	2,948	2,382	4,000	644
Gunnison	78	2,730	16,153	13,052	34,000	5,474
Hinsdale	—	—	—	—	—	—
Jefferson	61	2,135	630	509	61,000	9,821
Lake	10,783	377,405	385,428	311,426	225,000	36,225
LaPlata	355	12,425	234	189	—	—
Mineral	176	6,160	342,384	276,646	70,000	11,270
Montezuma	138	4,830	41	33	—	—
Montrose	14	490	23,550	19,028	274,000	44,114
Ouray	8,328	291,480	193,603	156,431	189,000	30,429
Park	18,734	655,690	13,361	10,796	5,000	805
Pitkin	—	—	52,413	42,350	4,000	644
Rio Grande	1,725	60,375	2,082	1,682	13,000	2,093
Routt	—	—	63	51	—	—
Saguache	49	1,715	24,379	19,698	58,000	9,338
San Juan	17,038	596,330	306,973	248,034	576,000	92,736
San Miguel	22,523	788,305	320,771	259,183	1,117,000	179,837
Summit	1,601	56,035	115,334	93,190	19,000	3,059
Teller	47,700	1,669,500	3,835	3,099	—	—
Total: 1946	137,210	4,802,350	2,167,500	1,751,340	2,984,000	480,424
1945	100,935	3,532,725	2,226,780	1,583,488	2,970,000	400,950
Increase or decrease, 1946	+36,275	+1,269,625	-59,280	+167,852	+14,000	+79,474

1/ Actual 11 months with December estimated.

2/ Includes placer production as follows: 1946, 19,586 ounces ($685,510); 1945, 7,901 ounces ($276,535).

3/ Includes placer production as follows: 1946, 3,667 ounces ($2,963); 1945, 1,395 ounces ($992).

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1946, by counties, in terms of recovered or recoverable metals — Continued

County	Lead		Zinc		Total value 1946 4/	Total value 1945 5/
	Pounds	Value	Pounds	Value		
Adams........	———	———	———	———	$21,776	$11,202
Boulder.......	90,000	$9,090	———	———	114,360	43,041
Chaffee.......	37,000	3,737	639,000	$79,236	122,616	43,848
Clear Creek...	869,000	87,769	837,000	103,788	377,155	407,326
Costilla......	———	———	———	———	———	70
Custer........	410,000	41,410	350,000	43,400	105,299	88,721
Dolores.......	3,890,000	392,890	6,852,000	849,648	1,411,717	1,458,273
Douglas.......	———	———	———	———	35	———
Eagle.........	1,536,000	155,136	32,326,000	4,008,424	4,226,362	3,774,669
Fremont.......	24,000	2,424	178,000	22,072	30,340	113,824
Garfield......	45,000	4,545	91,000	11,284	17,394	———
Gilpin........	110,000	11,110	55,000	6,820	32,996	24,797
Gunnison......	769,000	77,669	881,000	109,244	208,169	207,517
Hinsdale......	———	———	———	———	———	711
Jefferson.....	———	———	———	———	12,465	1,935
Lake..........	9,886,000	998,486	9,779,000	1,212,596	2,936,138	3,462,504
LaPlata.......	———	———	———	———	12,614	2,689
Mineral.......	491,000	49,591	3,000	372	344,039	378,801
Montezuma.....	———	———	———	———	4,863	———
Montrose......	———	———	———	———	63,632	62,701
Ouray.........	1,839,000	185,739	1,048,000	129,952	794,031	543,490
Park..........	120,000	12,120	728,000	90,272	769,683	408,386
Pitkin........	215,000	21,715	6,000	744	65,453	107,735
Rio Grande....	———	———	———	———	64,150	20,404
Routt.........	1,000	101	13,000	1,612	1,764	16,815
Saguache......	428,000	43,228	436,000	54,064	128,043	193,131
San Juan......	6,506,000	657,106	3,001,000	372,124	1,966,330	1,704,337
San Miguel....	4,531,000	457,631	3,440,000	426,560	2,111,516	1,634,943
Summit........	1,949,000	196,849	6,973,000	864,652	1,213,785	965,602
Teller........	———	———	———	———	1,672,599	999,049
Total: 1946	33,746,000	3,408,346	67,636,000	8,386,864	18,829,324	———
1945	34,088,000	2,931,568	71,546,000	8,227,790	———	16,676,521
Increase or decrease, 1946.	-342,000	+476,778	-3,910,000	+159,074	+2,152,803	———

4/ Average value of metals in 1946: Gold, $35 per fine ounce; silver, $0.808 per fine ounce; copper, $0.161 per pound; lead, $0.101 per pound; zinc, $0.124 per pound.

5/ Average value of metals in 1945: Gold, $35 per fine ounce; silver, $0.711 + per fine ounce; copper, $0.135 per pound; lead, $0.086 per pound; zinc, $0.115 per pound.

Boulder County.--There were about 32 mines in operation in Boulder County in 1946, compared with 17 in 1945; five properties were operated continuously throughout the year. They were the Smuggler mines operated by the Smuggler Mining & Milling Co., the John Jay mine operated by Ellen McNaughton and Earl Craig, the Poorman mine operated by various lessees, the American mine operated by James Pastore, and the Herald mine operated by Sayre & McChristy. The production of gold and silver was increased considerably during 1946, the first full year of operation since the rescinding of War Production Board Limitation Order L-208.

Chaffee County.--Metal production from Chaffee County in 1946 was derived chiefly from zinc ore from the Garfield mine operated by S. E. Burleson. The Good Hope Mining Co., Ltd., shipped gold bullion from its property in Lost Canyon during the latter half of the year. W. K. Howard shipped a sample lot of ore from the Madonna mine.

Clear Creek County.--The production of metals except gold in Clear Creek County decreased in 1946 compared with 1945. About the same number of mines were in operation. The increase in gold production can be attributed to the full-year operation of the Dixie mine by LeRoy Giles & Co. Operations at several mines in Clear Creek County were curtailed during the labor strike at the Leadville smelter because of lack of space to store ores or concentrates. The leading producing mines in the county in 1946 were the Dixie operated by LeRoy Giles & Co., the Grizzly group and Boston group operated by the Lupton Mining Co., the Smuggler mine operated by C. O. Parker & Co., the Harrison-Croesus mine operated by Ben Harrison, the Mendota mine operated by the Utze Lode Co., and the Minnesota mine operated by the Minnesota Mines, Inc.

Custer County.--The total value of the mineral production in 1946 in Custer County showed an increase of 19 percent over 1945. The Lady Franklin mine near Westcliffe, the largest producer of gold, silver, lead, and zinc in the county, operated continuously throughout the year. Other properties which were worked continuously during the year included the Defender mine operated by Wm. A. Walker and the Keystone mine operated by Colgate & Hoge. A shipment of ore was made from the King of Carbonates mine.

Dolores County.--Dolores County ranked fourth among Colorado counties in the output of lead and zinc and sixth in the production of silver and copper in 1946. The Rico Argentine Mining Co., by far the largest producer in the county and one of the major zinc-lead-silver producers in the State in 1946, operated its group of mines and 135-ton selective-flotation mill continuously throughout the year at approximately the same rate of output as in 1945. Markey Bros. worked the Yellow Jacket group under lease from the Rico Argentine Mining Co. A small shipment of zinc ore was made from the Nora Lilly mine by Stamphel & Barnes.

Eagle County.--The New Jersey Zinc Co., Empire Zinc Division, continued to operate at a slightly increased rate its Eagle mine and 600-ton underground selective-flotation mill at Gilman throughout the year. It is by far the largest producer of zinc in the State.

El Paso County.--The Golden Cycle mill at Colorado Springs operated throughout the year on company ore and custom ores. About 309,000 tons of ore of all classes were treated in 1946, as compared with 227,063 tons in 1945. Of the total ore treated, about 306,000 tons were company and custom gold-silver sulfotelluride ores from the Cripple Creek district (Teller County) and approximately 3,000 tons were bulk zinc-lead concentrates from the Ore & Chemical Co. heavy media separation plant in Lake County and gold ores from various shippers in Boulder County. The Golden Cycle

Corp. discontinued treatment of copper, lead, or zinc ores in its mill at Colorado Springs late in 1945; however, because of a previous contract agreement, concentrates were accepted from the Ore & Chemical Co. during the month of February; no other copper, lead, or zinc ores were accepted in 1946.

Fremont County.--The Cotopaxi mine in the Cotopaxi district, operated by the Monarch Galena Co., shipped zinc ore from January to August, when a fire destroyed the tipple, other mine buildings, and the timbering in the main shaft. The Horseshoe Mining Co. operated the Horseshoe mine from January through April. Several tons of matte and cleanings were shipped by Meck & McKinney from an old dump at the Florence smelter site.

Garfield County.--Beginning in March, A. G. Fischer shipped zinc ore from the Sunshine lode near Rifle.

Gilpin County.--During 1946 shipments of ore were made from 15 mines in Gilpin County, as compared with 10 in 1945. The Lu Ev Mining Co., operating the New Brunswick and Silver Dollar mines, was the only company in Gilpin County to ship ore continuously throughout the year. The county reported a slightly greater output in 1946 than in 1945.

Gunnison County.--The gross value of the metal output for Gunnison County in 1946 remained about the same as in 1945. The Callahan Zinc-Lead Co. continued to operate its Akron unit at White Pine. Shipments of crude ore were made from the Bull Domingo, Star, and Carter mines.

Jefferson County.--The Malachite mine, 3½ miles northwest of Morrison, was reopened by R. M. Moore. The mine has a complex copper-zinc ore which was first milled at the Silver Spruce mill near Idaho Springs, and later at the company mill at Dumont. Shipments of copper concentrates were begun in September. Three small deposits of gold were made at the Denver Mint from hand-placer operations in Jefferson County in 1946.

Lake County.--The gross value of metal output in Lake County decreased 15 percent in 1946 from 1945, due chiefly to cessation of operations in August at the Ore & Chemical Co. heavy media separation plant, and to the decreased production from operations of the John Hamm Mining & Milling, Ltd. Despite a decreased output of all metals Lake County continued to lead all Colorado counties in lead production and gained first place over Mineral County in silver output.

The American Smelting & Refining Co. operated its Arkansas Valley lead bullion-leady copper matte smelter. The smelter closed February 1 in order to build up a stock pile of ore. On February 25 employees went on strike and further ore shipments, except those in transit, were refused. The strike ended June 17, at which time shipments of ore again were accepted.

The Resurrection Mining Co. operated its mine and 600-ton selective-flotation mill continuously throughout 1946. The mill treated, in addition to company ore, custom ore from Clear Creek, Lake, Park, and Summit Counties.

The American Smelting & Refining Co. operated its Leadville milling unit on company ore from mines in Summit County and custom ore from various shippers in Chaffee, Clear Creek, Custer, Fremont, Gunnison, Mineral, Ouray, Park, Pitkin, Saguache, San Juan, and Summit Counties.

The Ore & Chemical Co. operated its 1,000-ton heavy media separation plant from January to August, treating ores from the Small Hopes, Robert Emmet, Colorado No. 2, and Colonel Sellers dumps.

John Hamm Mining & Milling, Ltd., operated its 600-ton gravity-concentration mill the entire year on ore from the Mahala, A. Y. Minnie, and M. & M. dumps.

The Ibex mine was operated by the Ibex Mining Co. and lessees. Ore was shipped by the various operators to the Resurrection mill and to the American Smelting & Refining Co. Leadville milling unit and Arkansas Valley smelter. Production was continuous throughout the year. The Cloud City mill was operated on ore from the St. Louis mine and dump. Other properties operating throughout the year included the Valley mine leased by Harry Sundstran, Dolly B mine operated by McCaughan & Co., Garabaldi Lease operated by Robert Jones, New Monarch operated by R. C. Nelson, and the American dump operated by the American Smelting & Refining Co.

La Plata County.—Bert Thompson shipped ore from the Bessie G mine to the United States Smelting, Refining & Mining Co. Midvale, Utah, smelter. A small shipment of dry and siliceous gold ore was made from the Idaho Lode by A. B. Crosby. A small lot of gold bullion was shipped from the Golden Rose placer by Glen W. & Dean Stewart.

Mineral County.—A sharp decline in silver and lead output in 1946 forced Mineral County, leading Colorado silver-producing county since 1942, to yield first place to Lake County. The Emperius Mining Co. operated its 100-ton flotation mill throughout the year on ore from its Amethyst, New York, Commodore, and Del Monte-Aspen groups, and Equinox mine. The New Ridge Mining Co. operated its Ridge mine, making small shipments of ore in January, June, and July to the American Smelting & Refining Co. Arkansas Valley smelter. The Volunteer Mining Co. shipped lead ore to the Arkansas Valley smelter from its Volunteer mine in August and September.

Montezuma County.—In August the Ute Mining Co. began shipments of gold bullion to the Denver Mint from the Red Arrow mine.

Montrose County.—The New Cashin Mines, Inc., operated its Cashin mine throughout the year and shipped copper fluxing ore to the Garfield, Utah, smelter.

Ouray County.—The total value of metals produced from Ouray County mines increased 46 percent in 1946 over 1945. The county ranked fifth in the production of silver and copper, sixth in the production of gold and lead, and seventh in the production of zinc for the State. The Camp Bird mine and 125-ton amalgamation-flotation mill were operated throughout the year by the King Lease, Inc. Products from the mill were gold bullion and bulk concentrates. The General Ore Reduction Co. operated the Banner American mill on custom ores until July, when it was sold to the American Zinc, Lead & Smelting Co., along with other mining property. Remodeling and enlarging of the mill were begun immediately; the mill was again placed in operation late in the year. Other properties operated during the year were the Michael Breen mine and the Bachelor Consolidated mine.

Park County.—The total value of metal production from Park County increased 88 percent in 1946 over 1945 as a result of the first full year of operation of gold mines following the rescinding of War Production Board Limitation Order L-208. The county ranked third in the production of gold for the State. The South Platte Dredging Co. operated its floating connected-bucket dredge throughout the year on placer gravels near Fairplay. The Timberline Dredging Co. operated its electric floating connected-bucket dredge on Beaver Creek near Fairplay. The company started bullion shipments in June. Cooley Bros. operated a dragline floating dredge, and began shipments of bullion in June.

The Buckskin Joe Mines, Ltd., operated its Phillips group of mines in Buckskin Gulch throughout the year. The company Alma Betts 65-ton flotation mill burned in January; ore was sent to the Resurrection mill at Leadville for treatment the remainder of the year. Among the other mines producing in the county in 1946 were the Niagara, Hock Hocking, Orphan Boy, South London, and Sweet Home. The Record mill in the Mosquito district was being prepared by Richard Charles King to receive custom ores.

Pitkin County.--The gross value of metal production from mines in Pitkin County decreased 39 percent in 1946 from 1945. Properties worked throughout the year included the Midnight Mining Co. Midnight mine and 50-ton selective-flotation mill and the Herron Bros. Smuggler-Durant mine and 150-ton gravity-concentration mill.

Rio Grande County.--Two operators the Gold Links Mine and the Summitville Mining Co., made ore shipments from Rio Grande County in 1946.

Routt County.--A final shipment of zinc-lead ore was made in January by Milbank Franz from the Greenville mine in the Hahns Peak area.

Saguache County.--The output of all metals from mines in Saguache County decreased in 1946 from 1945, resulting in a 34-percent decrease in value. Seven mines were in operation in the county during the year. They were the Superior-Erie group operated by the Superior Mines Division of the Conejos Corp., the Rawley mine operated by lessees, the St. Louis group operated by the Pratt-Bonanza Mining & Milling Co., the Warwick group, Vallejo mine, Shawmut mine, and the Cora group.

San Juan County.--The output of all metals from San Juan County increased in 1946, with the exception of gold which decreased 4,385 ounces. The gross value of all metals increased 15 percent over 1945. The county ranked second in the production of copper and lead, fourth in gold and silver, and sixth in zinc for the State. The Shenandoah-Dives Mining Co. continued to operate its group of claims and 700-ton selective-flotation mill. Custom ore was accepted for treatment from the Bandora, Osceola, Columbus, Lark, Tom Moore, Burrows, and Coming Wonder mines, all in San Juan County. The Denver Equipment Co. operated the Pride of the West group and Green Mountain mines and its 100-ton selective-flotation mill throughout the year. The Highland Mary Mines, Inc., worked its mine and 100-ton selective-flotation mill. Other mines operating throughout the year included the Lark and Lead Carbonate. The Treasure Mountain Gold Mining Co. resumed operations on the Santiago tunnel preparatory to mining the Golden Fleece, Scotia, San Juan Queen, and other claims.

San Miguel County.--Production of all metals in San Miguel County increased in 1946 over 1945. The total gross value of these metals rose 29 percent. The production from the Idarado Mining Co. property was credited to San Miguel County. The company continued to develop its Black Bear property through the 12,000-foot Treasury Tunnel, with its portal in Ouray County and to make additions to its 300-ton selective-flotation mill located at the tunnel portal. Zinc, lead, and copper concentrates were produced. The Telluride Mines, Inc., operated the Smuggler Union, Montana, Black Eagle, and Cimarron mines, treating the ore in the company 550-ton amalgamation and gravity- and flotation-concentration mill at Pandora. The company continued to drive a 3-mile, 9- by 9-foot, tunnel in the sediments at the mill level to connect with the Pandora and Smuggler Union veins. The Alta Mines, Inc., continued to operate its Alta-St. Louis mine and 100-ton flotation mill. The Silver Bell Mines Co. completed a new 150-ton flotation plant at Ophir to treat ore from the Silver Bell mine; actual production was started late in the year.

Summit County.—The total value of metals produced from Summit County mines increased 26 percent in 1946 over 1945. There were about 23 mines, including 5 placers, in operation in 1946 as compared with a total of 19 in 1945. Summit County ranked third in zinc production and fifth in lead production for the State in 1946. The Kokomo unit of the American Smelting & Refining Co., the largest producer in the county, operated its Lucky Strike group and Victory mine; ore was shipped to the company Leadville milling unit. The Wilfley Leasing Co. operated its mine throughout the year; ore was shipped to the Resurrection mill at Leadville. The Kimberly Mines, Inc., shipped ore from its Kimberly mine to the Resurrection mill throughout the year. Other mines in operation include the Ida Belle, Country Boy, Big Four, Snow Bank (formerly Michigan), Florado, Jumbo, Queen of the West, Erickson, and the Wilson dump.

Teller County.—Mines in the Cripple Creek district continued to be the major source of gold in Colorado; the output increased 67 percent over 1945, but was approximately one-third of 1941 output, the last year of full-production. All the ore from the district was shipped to the Golden Cycle 1,500-ton cyanidation-amalgamation mill at Colorado Springs. The bulk of the district output was recovered from mines operated by the Golden Cycle Corp., the Portland and Vindicator mines operated by the United Gold Mines Co., and the Stratton Estate group operated by lessees. The Cresson Consolidated Gold Mining & Milling Co., the largest Cripple Creek producer in the past, reopened its mine on April 1; on July 22 a cave-in at the mine caused considerable damage and stopped ore shipments for about three months. Mines, Inc., made extensive examinations of the Stratton and Cavanaugh properties and shipped test lots of ore to the Golden Cycle mill.

Mine production of gold, silver, copper, lead, and zinc in Colorado, 1946, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January......	9,420	160,273	250,000	2,426,000	5,726,000
February.....	9,289	187,177	206,000	2,990,000	6,262,000
March........	11,814	184,589	236,000	2,908,000	6,896,000
April........	10,285	153,722	262,000	2,524,000	5,516,000
May..........	12,094	171,774	242,000	3,160,000	6,110,000
June.........	11,415	164,033	220,000	3,262,000	5,934,000
July.........	11,158	179,903	352,000	2,966,000	4,968,000
August.......	12,373	312,116	260,000	3,142,000	5,360,000
September....	12,078	227,958	200,000	2,228,000	5,174,000
October......	13,284	156,936	262,000	2,480,000	5,510,000
November.....	12,200	135,019	254,000	2,960,000	5,180,000
December.....	11,800	134,000	240,000	2,700,000	5,000,000
	137,210	2,167,500	2,984,000	33,746,000	67,636,000
Total, 1945	100,935	2,226,780	2,970,000	34,088,000	71,546,000

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

For Release January 10, 1947.

MINERAL MARKET REPORTS
MMS NO. 1481

METAL MINING IN NEW MEXICO, 1946 - PRELIMINARY ANNUAL FIGURES

Mines in New Mexico yielded (in terms of recoverable metals) 3,968 fine ounces of gold, 328,000 ounces of silver, 100,426,000 pounds of copper, 10,024,000 pounds of lead, and 72,726,000 pounds of zinc in 1946, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. These preliminary figures are based on 10 months actual mine production with November and December production calculated from reports by mine operators, refineries (including the various United States Mints), and smelters of anticipated shipments and receipts.

Production in 1945 was 5,604 fine ounces of gold, 465,127 ounces of silver, 113,142,000 pounds of copper, 15,324,000 pounds of lead, and 80,590,000 pounds of zinc.

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The total gross value of gold, silver, copper, lead, and zinc produced in 1946, calculated at the average prices shown below, was $26,602,938, compared with $26,386,781 in 1945, and included gold valued at $138,880, silver $265,024, copper $16,168,586, lead $1,012,424, and zinc $9,018,024. Of the 1945 total value, $196,140 was in gold, $330,757 in silver, $15,274,170 in copper, $1,317,864 in lead, and $9,267,850 in zinc. The price of gold, fixed by the United States Government, remained at $35 a fine ounce, and the price of domestic-mined silver was $0.711+ from January 1 through June 30, when it was raised by Act of Congress to $0.905; the average weighted yearly price per fine ounce was $0.808. The average weighted yearly price per pound, including bonus payments for over-quota production, of copper advanced from $0.135 in 1945 to $0.161 in 1946, lead from $0.086 to $0.101, and zinc from $0.115 to $0.124.

During 1946, uncertainties in metal prices, continued shortage of skilled labor, labor strikes or unrest at major producing mines, and smelters, difficulty in obtaining equipment, especially for new operations, and rising costs were all factors affecting the New Mexico metal mining industry. Cessation of operations in June at the Carlisle group of mines operated by the Exploration Syndicate, Inc., and the loss of about 3 months' production owing to a labor strike at the Hanover unit of the American Smelting & Refining Co. were largely responsible for the decreases in gold, silver, lead, and zinc production in 1946. Smaller output from the Kennecott Copper Corp. Chino mine and loss of about 3 months' production at the Phelps Dodge Corp. Burro Mountain property resulted in a decline in New Mexico copper output. Production from other large operations in New Mexico varied only slightly from the 1945 output.

Prepared by S. A. Gustavson, Denver Office, Metal Economics Division, Economics and Statistics Branch.

Grant County.--The Chino Mines Division of the Kennecott Copper Corp. operated its open-pit mine at Santa Rita in the Central district and its flotation mill and reverberatory copper smelter at Hurley throughout 1946, and was the major producer of copper in New Mexico. The Kennecott Copper Corp. continued to expand operations at its Oswaldo zinc-lead properties; crude ore was shipped to the Empire Zinc Co. mill for treatment.

The Phelps Dodge Corp. Burro Mountain property in the Burro Mountain (Tyrone) district accounted for the bulk of the remaining 1946 copper production in Grant County. This operation was closed by a labor strike from March 4 to July 1.

The United States Smelting, Refining & Mining Co. operated several mines in the Central district under the single name "Bayard mine" and was the most important producer of zinc and lead in the State.

The Peru Mining Co. operated its Pewabic, Copper Flat, and Kearny mines in the Central district, and treated zinc and lead ore at the company 1,000-ton selective-flotation mill at Wemple near Deming (Luna County). Custom ore from the Phelps Dodge Corp. Copper Queen mine (Ariz.) was received at the mill during January, February, and March.

The Empire Zinc Co. operated its Hanover mine group and selective-flotation mill throughout the year. Custom ore was received from the Kennecott Copper Corp. Oswaldo mine, in the Central district, Grant County, and the company Lynchburg mine in the Magdalena district, Socorro County, leased and operated by C. S. Elayer.

The American Smelting & Refining Co. operated its Ground Hog unit in the Central district and the leased Hanover milling unit (formerly Combination-Black Hawk mill) continuously during 1946, except for the period of the labor strike, February 25 to June 17. Custom ore was received from mines located in Grant, Santa Fe, and Socorro Counties.

The Exploration Syndicate, Inc., worked its 125-ton selective-flotation mill and leased Carlisle group of mines until June when all operations were suspended.

Other producing mines in Grant County include the Black Hawk Consolidated Mines Co. Hobo mine; the Houston-Thomas group operated by A. B. Stewart; and the Royal John mine operated by A. L. Owen. Properties making small shipments include the Liberty Bell, Astrologer-Rover, Boston Bicket, Lucky Seven, and Little Goat. The Ira L. Wright assay office at Silver City resumed the purchase of small lots of crude ore.

Catron County.--The Silver Creek Mining Co. operated its Bearup mine throughout 1946 and made shipments of gold-silver ore to the copper smelter of the American Smelting & Refining Co. at El Paso, Tex.

Colfax County.--A small shipment of gold bullion was made by G. J. Smith from the Big Nigger claim.

Dona Ana County.--Small shipments of lead ore were made from the Torpedo mine near Organ by J. H. Brown.

Hidalgo County.--The Banner Mining Co., the largest producer in Hidalgo County, operated its Bonney and Misers Chest group of copper mines and 500-ton flotation mill throughout the year. Other mines making shipments in the county included the Atwood, La Rosa group, Silver Dollar, and Tom group.

Lincoln County.--A small shipment of lead ore was made from the Jester group by Lamar Bailey.

Otero County.--A small shipment of copper ore was made by B. D. Lampros from the Courtney mine.

Santa Fe County.--The Moline Mining & Milling Co. operated its 35-ton selective-flotation mill intermittently during 1946 on zinc-lead ores chiefly from the Franklin claim. The company owns the Cash Entry, Franklin claims, Chicago group and several other adjoining claims.

Other mines making shipments in the county included the Pennsylvania, operated by the Cerrillos Lead & Zinc Co., the Candelaria, and the Santa Fe group. A small quantity of gold bullion was shipped to the Denver Mint from the Golden placer.

Sierra County.--George Meyers made small shipments of copper ore from the Snake group. Alvin W. Emerick made a test shipment of lead ore from the Welford No. 1 claim.

Socorro County.--The American Smelting & Refining Co. operated its Magdalena unit (Waldo mine) and 200-ton selective-flotation mill throughout the year. C. S. Elayer operated the Lynchburg mine. McDonald & Dobson shipped zinc-lead ore from its Nitt properties. A small quantity of gold bullion was shipped from the Rose Quartz group to the Denver Mint.

Taos County.--I. Ross shipped gold bullion from his placer on the Red River.

Mine production of gold, silver, copper, lead, and zinc in New Mexico, 1946, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January	370	26,000	9,068,000	1,104,000	5,566,000
February	370	27,900	8,144,000	1,050,000	5,908,000
March	273	22,100	8,734,000	768,000	5,306,000
April	413	24,350	8,634,000	776,000	4,980,000
May	487	20,700	7,872,000	688,000	5,358,000
June	290	26,190	8,046,000	782,000	5,108,000
July	220	28,180	8,892,000	912,000	6,454,000
August	343	24,250	8,276,000	732,000	7,046,000
September	352	29,230	8,170,000	692,000	6,300,000
October	300	33,600	8,390,000	820,000	6,800,000
November	290	33,000	8,000,000	900,000	7,000,000
December	260	32,500	8,200,000	800,000	6,900,000
	3,968	328,000	100,426,000	10,024,000	72,726,000
Total, 1945	5,604	465,127	113,142,000	15,324,000	80,590,000

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FOR RELEASE JANUARY 10, 1947

Mineral Market Reports
MMS No. 1482

METAL MINING IN ARIZONA, 1946 - PRELIMINARY ANNUAL FIGURES

Despite a serious labor strike at certain copper mines and smelters in Arizona from March 20 to June 30, the State copper production was approximately 1 percent greater in 1946 than in 1945, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. The upward trend in copper output to an average of about 59,000,000 pounds a month during the last quarter of 1946 from an average of 48,000,000 pounds a month during the first quarter more than offset a pending decrease. The outputs of gold, lead, and zinc increased also, but that of silver declined; however, the value of the silver output was greater owing to an increase in the average market price of the metal. Production trends show gold and silver declining each year from 1941 through 1945 with silver continuing to decline in 1946, but gold reversing itself in this last year; output of copper increased each year from 1938 through 1943 but declined in 1944 and 1945 and increased again in 1946; output of lead increased each year since 1943; and output of zinc increased each year since the resumption of zinc production in 1933.

Arizona ores and gravels in 1946 yielded gold, silver, copper, lead, and zinc valued at $114,527,200, the greatest value since 1943, and a 19-percent gain over 1945. The value of the gold output was more than 2 percent of the total value; silver, more than 2 percent; copper, 82 percent; lead, 4 percent; and zinc, 9 percent. The State remained the largest producer of copper in the United States and again ranked first in the total value of the five metals.

Of the six copper smelters in Arizona four--International Smelting & Refining Co. at Miami, Magma Copper Co. at Superior, Phelps Dodge Corp. at Clarkdale, and American Smelting & Refining Co. at Hayden--operated continuously throughout the year. The other two smelters--Phelps Dodge Corp. smelters at Douglas and Morenci--were idle from March 20 to June 30 owing to a labor strike.

Production in 1946 (in terms of recoverable metals) was 78,300 fine ounces of gold, 3,400,000 fine ounces of silver, 582,000,000 pounds of copper, 47,500,000 pounds of lead, and 85,000,000 pounds of zinc. These figures compare with outputs in 1945 of 77,223 ounces of gold, 3,558,216 ounces of silver, 574,406,000 pounds of copper, 45,734,000 pounds of lead, and 80,462,000 pounds of zinc, indicating increases in 1946 of 1,077 ounces of gold (1 percent), 7,594,000 pounds in copper (1 percent), 1,766,000 pounds in lead (4 percent), and 4,538,000 pounds in zinc (6 percent), but a decrease of 158,216 ounces in silver (4 percent). The preliminary figures for 1946 are based on actual mine production reported by operators and receipts at smelters and the United States mints covering 10 months, with November and December production calculated from other sources of information.

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, Metal Economics Division, Economics and Statistics Branch.

At the average prices used by the Bureau of Mines, the gross calculated values of the outputs of these metals in Arizona in 1946, with comparative figures for 1945(in parentheses, were: Gold, $2,740,500 ($2,702,805); silver, $2,747,200 ($2,530,287 copper, $93,702,000 ($77,544,810); lead, $4,797,500 ($3,933,124); and zinc, $10,540, ($9,251,980)—a total of $114,527,200 in 1946 compared with $95,963,006 in 1945.

The price of gold ($35 per ounce), fixed by the United States Government, remained unchanged in 1945 and 1946. The average price of silver rose from $0.711 plus per ounce to $0.808 per ounce; the average weighted yearly price of copper increased from $0.135 to $0.161 a pound, lead from $0.086 to $0.101 a pound, and zinc from $0.115 to $0.124 a pound. In calculating average weighted prices for copper, lead, and zinc in 1946 allowance is made for overquota bonus payments.

About 76 percent of the gold and 51 percent of the silver produced in Arizona in 1946 were recovered from copper ore mined at Bisbee, Ajo, Jerome, Superior, Morenci, and Miami. The rest of the gold came largely from zinc-lead ore from a mine in the Big Bug district. Most of the remaining silver came from zinc-lead ore from the Big Bug, Harshaw, Pima, Warren (Bisbee), and Old Hat districts, and silver ore from the Ash Peak district.

Production of gold from copper ore decreased but that from zinc-lead ore increased. The output of gold from placers decreased from 540 ounces in 1945 to an estimated 350 ounces in 1946. The largest producers of gold in Arizona in 1946 were the New Cornelia, United Verde, Iron King, Magma, Morenci, and Copper Queen mines; these six properties produced 85 percent of the State total. The principal gold-producing districts in Arizona in 1946 were the Ajo (31,650 ounces), the Big Bug (8,700 ounces), the Verde (8,500 ounces), the Pioneer (Superior) (7,000 ounces), the Warren (Bisbee) (6,250 ounces), and the Copper Mountain (Morenci) (5,700 ounces).

The decrease of 4 percent in output of silver in Arizona in 1946 resulted largely from a decline in output of copper ore from the Copper Queen, United Verde, and Morenci properties. About 70 percent of the State silver output in 1946 came from the Copper Queen, United Verde, New Cornelia, and Morenci mines of the Phelps Dodge Corp. and the Iron King and Magma mines. The output of silver from the Warren district, the principal silver-producing area in Arizona, decreased from 963,180 ounces in 1945 to about 815,000 ounces in 1946. Other important silver-producing districts were the Verde with 435,000 ounces, the Ajo with 400,000 ounces, the Big Bug with 335,000 ounces, the Copper Mountain (Morenci) with 325,000 ounces, the Pioneer (Superior) with 240,000 ounces, the Globe (Inspiration-Miami) with 170,000 ounces, the Pima with 145,000 ounces, and the Harshaw with 125,000 ounces.

Although Arizona's output of copper was greater in 1946 than in 1945, the labor strike at some mines and smelters from March 20 to June 30, 1946, substantially affected the annual output. Production in 1946 was 582,000,000 pounds compared with 574,406,000 pounds in 1945; the output rose from a low of about 31,600,000 pounds in June to a high of about 61,600,000 pounds in October. The Morenci mine remained by far the largest producer of copper in Arizona; it was followed by the New Cornelia, Inspiration, Castle Dome, Miami, Kennecott (Ray mines), United Verde, Magma, Bagdad, and Copper Queen properties. These 10 mines contributed about 562,500,000 pounds, compared with 10 mines producing 555,143,324 pounds in 1945, or nearly 97 percent of the State total.

The Copper Mountain (Morenci) remained the chief copper-producing district in Arizona in 1946, although its output declined from 201,652,200 pounds in 1945, to about 193,000,000 pounds in 1946; the Globe (Inspiration-Miami) district was second, its output increasing from 157,291,400 to 175,000,000 pounds; the Ajo district ranked third, increasing from 75,900,000 to 91,000,000 pounds; the Verde district ranked fourth, decreasing from 40,224,000 to 32,300,000 pounds; and the Mineral Creek (Ray) district ranked fifth, decreasing from 39,342,400 to 32,000,000 pounds. The output from the Warren district decreased from 25,133,000 to 9,800,000 pounds, but that from the Pioneer (Superior) district increased from 16,730,000 to 23,700,000 pounds. Nearly all the crude copper ore and copper concentrates produced in Arizona are treated in smelters in Arizona.

In spite of a labor strike at some zinc-lead mines in Arizona during the spring months of 1946, which resulted in a loss of approximately 9,000,000 pounds of lead, the State in 1946 exceeded its 1945 record output of lead by 1,766,000 pounds. This gain was due principally to an increase in output of zinc-lead ore from the Copper Queen mine at Bisbee, although the property was nonproductive in April, May, and June, owing to a labor strike; however, the mine continued to be by far the largest producer of lead in Arizona. During the second quarter of the year the capacity of the 450-ton flotation mill at the mine was doubled. Other large producers of lead were the Mammoth-St. Anthony property at Tiger, the San Xavier (Eagle-Picher Mining & Smelting Co.) south of Tucson, the Iron King mine at Humboldt, and the Trench-Flux group near Patagonia. In 1946 these five properties produced 87 percent of the State lead output. About 92 percent of the lead output in 1946 was recovered from zinc-lead ore and the rest largely from lead ore. Nearly all the crude lead ore and lead concentrates produced in Arizona are shipped to the lead smelter at El Paso, Tex.

Each year for the past seven Arizona has succeeded in making a record output of zinc, and in 1946 the output of 85,000,000 pounds exceeded the record output of 1945 by 4,538,000 pounds (6 percent). Although the Copper Queen mine at Bisbee, by far the largest producer of zinc in Arizona in 1945 and 1946, was nonproductive more than three months in 1946, the mine increased its output of zinc nearly 15 percent over 1945. Other large producers of zinc were the Iron King, Mammoth-St. Anthony, San Xavier, Republic (Coronado Copper & Zinc Co.), and Trench-Flux properties. In 1946 these six properties produced 90 percent of the State zinc output. About 85 percent of the zinc output in 1946 was recovered from zinc-lead ore and nearly all the remainder from zinc-copper ore and zinc ore. Zinc concentrates produced at mills in Arizona in 1946 were shipped to smelters at Amarillo, Dumas, and Corpus Christi, Tex., Bartlesville, Okla., Great Falls, Mont., East St. Louis, Ill., and Fort Smith, Ark.

The output of ores and old tailings in Arizona in 1946 was about 30,800,000 tons, a decrease of 466,900 tons from 1945. Most of the loss was in copper ore from the Copper Mountain (Morenci), Warren (Bisbee), Verde, and Mineral Creek (Ray) districts; the total output of copper ore decreased from 30,644,470 to about 30,200,000 tons. There was also a decrease in output of zinc-copper ore, zinc-lead-copper ore, silver ore, and lead ore, but an increase in zinc-lead ore and gold ore and old tailings.

Mine production of gold, silver, copper, lead, and zinc in Arizona in 1946, by months, 1/ in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January......	5,765	320,000	50,400,000	4,460,000	8,100,000
February.....	6,300	307,000	48,500,000	4,710,000	7,700,000
March........	6,465	256,300	45,000,000	3,480,000	5,900,000
April........	5,350	186,900	32,800,000	2,060,000	3,730,000
May..........	5,500	169,900	32,700,000	1,950,000	3,940,000
June.........	5,750	186,500	31,600,000	1,970,000	3,380,000
July.........	6,080	282,800	51,900,000	4,670,000	7,600,000
August.......	6,090	323,750	53,000,000	5,400,000	9,100,000
September....	7,300	328,350	57,300,000	4,700,000	8,700,000
October......	8,200	356,000	61,600,000	4,800,000	9,250,000
November.....	7,500	338,500	56,600,000	4,500,000	8,600,000
December.....	7,500	344,000	60,600,000	4,800,000	9,000,000
	78,300	3,400,000	582,000,000	47,500,000	85,000,000
Total 1945...	77,223	3,558,216	574,406,000	45,734,000	80,462,000

1/ Revised figures.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

For release January 10, 1947.

MINERAL MARKET REPORT
MMS NO. 1483.

METAL MINING IN THE CENTRAL STATES, 1946 - PRELIMINARY ANNUAL FIGURES

The mine output of copper in the Central States in 1946 again decreased sharply and was the lowest in quantity since 1933, according to the Joplin Office of the Bureau of Mines, United States Department of the Interior. The Michigan production (21,787 short tons of recoverable copper) was the smallest in 67 years, and the Missouri output (1,850 tons) was less than in 1945 or 1944. Lead production decreased 18 percent in quantity from 1945, largely as the result of a lower output in the Southeastern Missouri region, which contributed 82 percent of the total compared with 86 percent in 1945. The quantity of crude zinc and zinc-lead ores mined increased substantially, but owing to the decline in average grade of the ores and in both quantity and grade of the old zinc tailings remilled, the output of recoverable zinc decreased slightly from 1945. The Tri-State (Kansas-Southwestern Missouri-Oklahoma) district produced 85 percent of the Central States total zinc and 15 percent of the lead in 1946 compared with 85 and 12 percent, respectively, in 1945.

Preliminary figures for 1946, based on 11 months' actual production with December estimated, show an output (in terms of recoverable metals) of 68,765 fine ounces of silver (all byproduct of base-metals production), 23,637 short tons of copper, 165,770 short tons of lead, and 162,500 short tons of zinc. In 1945 the output was 118,883 ounces of silver, 33,800 tons of copper, 201,520 tons of lead, and 164,225 tons of zinc, indicating decreases for 1946 of 50,118 ounces of silver, 10,163 tons of copper, 35,750 tons of lead, and 1,725 tons of zinc.

The prices used herein for calculating the value of the production in 1946 are the average Government price of $0.808 per fine ounce of silver and average weighted yearly prices (including an estimate for Government premiums) of $0.161 per pound of copper, $0.101 per pound of lead, and $0.124 per pound of zinc. In 1945 the price used for silver was $0.711 plus, copper $0.135, lead $0.086, and zinc $0.115.

At the foregoing prices the value of the silver production in 1946 and 1945, respectively, was $55,562 and $84,539, copper $7,611,114 and $9,126,000, lead $33,485,540 and $34,661,440, and zinc $40,300,000 and $37,771,750—a total of $81,452,216 in 1946 compared with $81,643,729 in 1945.

Prepared by A. J. Martin, Joplin (Missouri) Office, Metal Economics Division, Economics and Statistics Branch.

Mine production of silver, copper, lead, and zinc in the Central States, 1945-46, in terms of recoverable metals

State	Silver		Copper		Lead		Zinc		Total value
	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	
Arkansas..............	---	---	---	---	2	$404	138	$34,224	$34,628
Illinois..............	2,532	$2,046	---	---	3,931	794,062	8,771	2,175,208	2,971,316
Kansas................	---	---	---	---	7,591	1,533,382	46,173	11,450,904	12,984,286
Kentucky..............	---	---	---	---	120	24,240	273	67,704	91,944
Michigan..............	---	---	21,787	$7,015,414	---	---	---	---	7,015,414
Missouri..............	66,233	53,516	1,850	595,700	139,322	28,143,044	21,780	5,401,440	34,193,700
Oklahoma..............	---	---	---	---	13,170	2,660,340	71,000	17,608,000	20,268,340
Wisconsin.............	---	---	---	---	1,634	330,068	14,365	3,562,520	3,892,588
Total:									
1946..............	68,765	55,562	23,637	7,611,114	165,770	33,485,540	162,500	40,300,000	81,452,216
1945..............	118,883	84,539	33,800	9,126,000	201,520	34,661,440	164,225	37,771,750	81,643,729
Increase or decrease 1946................	-50,118	-28,977	-10,163	-1,514,886	-35,750	-1,175,900	-1,725	+2,528,250	-191,513

Silver

Most of the silver output in the Central States in 1946 was recovered in desilverizing some of the lead bullion made in smelting lead concentrates from the Southeastern Missouri region. Some silver was recovered from copper concentrates made in milling lead-copper ore mined in the same region and from lead concentrates produced in the Southern Illinois fluorspar-zinc-lead region. Ordinarily silver is recovered as a byproduct from some of the Michigan copper ore and bullion, but none was reported from this source in 1946.

Copper

The output of recoverable copper in Michigan decreased from 30,401 tons in 1945 to about 21,787 tons in 1946. The Quincy and Copper Range mines, substantial producers until August 1945, were idle throughout 1946. The reclamation plants and all but one of the mines were inoperative from about May 10 to June 16 because of the shortage of coal for generating electric power that followed the strike of the bituminous coal miners. The reclamation plants contributed 28 percent of the total copper in 1946 and 27 percent in 1945. The average total price (including Government premiums) paid for the mine output of copper in Michigan in 1945 was 17.77 cents a pound; complete data for 1946 are not yet available.

The Calumet and Hecla Consolidated Copper Co., principal producer of copper in Michigan, operated the Ahmeek stamp mill, 2 reclamation plants, 1 smelter, and 7 mines in the Upper Peninsula area. The smelter treated the entire Michigan output of concentrates and mass copper during the year; the Copper Range smelter, which treated part of the output in 1945, was idle throughout 1946. The Isle Royale Copper Co. operated its mine and stamp mill continuously and produced 16 percent more copper than in 1945. The Quincy reclamation plant nearly equalled its 1945 rate of operation except during the 5-week period of idleness caused by the coal shortage. The Copper Range Co. continued the drilling program at its White Pine property in Ontonagon County and sank a 30-degree inclined shaft. Ore was encountered at a depth of 900 feet and the shaft was continued to 1,400 feet. A station was cut and drifting on one level near the bottom of the shaft was progressing as the year ended.

The Missouri production of recoverable copper was 1,850 tons in 1946 compared with 3,399 tons in 1945. Part of the output in both years was contained in byproduct matte shipped from smelters treating Southeastern Missouri lead concentrates, and part in copper concentrates shipped from the Madison mill at Fredericktown, which treated lead-copper ore.

Lead and zinc

Southeastern and Central Missouri. - The Southeastern Missouri district produced about 41 percent of the United States total mine production of recoverable lead in 1946 and 44 percent in 1945. The district output in 1946 was 136,000 tons compared with 173,005 tons in 1945. The mines of the St. Joseph Lead Co.

in St. Francois County yielded most of the production in both years. Four large groups, each served by a mill, were operated. The mills together have a total daily capacity of 21,400 tons of ore. The company also operated the Mine La Motte group and 1,500-ton mill in Madison County. The operating time of all five groups was reduced from 6 to 5 days a week in May, and about 8 operating days were lost in October as the result of a labor strike. The company has a smelter at Herculaneum (Mo.), which treats part of the company concentrates and also handles custom concentrates. The electrothermic zinc-recovery slag plant at the smelter was not operated in 1946.

Other producing companies in Madison County were the Fredericktown Lead Co., operating the Catherine and Fleming lead mines and mill; the Park City Consolidated Mines Co., operating the Ruth lead mine and mill; and the St. Louis Smelting and Refining Co., working chiefly lead-copper ore bodies in the Madison mine group and operating the Madison mill. In Jefferson County the Desoto Lead & Zinc Co. operated a mill at Valles Mines on zinc-lead carbonate ore from dumps, and the Silver Springs Mining Co. ran a small mill intermittently on ore of a similar type. Occasional cars of galena, mostly from barite diggings, were shipped from other counties in Southeastern and Central Missouri.

Tri-State district (Kansas, Oklahoma, Southwestern Missouri). - The Tri-State district produced approximately 258,700 tons of zinc concentrates and 31,700 tons of lead concentrates in 1946 compared with 259,001 and 31,844 tons, respectively, in 1945. The value of the output in 1946 (including Government premiums) was around $29,850,000 for zinc concentrates and $4,800,000 for lead concentrates compared with $28,386,683 and $3,969,305, respectively, in 1945. The district contributed about 24 percent of the United States total mine output of zinc in 1946 and 23 percent in 1945; of the lead, it contributed 7 percent in 1946 and 6 percent in 1945. The average recovery of combined zinc and lead from crude ore declined from 3.36 percent in 1945 to 3.12 percent in 1946, and the recovery from old tailings remilled from 0.37 to 0.33 percent. Old tailings yielded 13 percent of the total zinc concentrates in 1946 and 16 percent in 1945. Most of the mines and mills in the district were shut down about 3 weeks in July pending reinstatement of the Premium Price Plan, and a few were closed for other short periods by labor strikes. About 43 mills were operating in December 1946, of which 14 were tailing mills, compared with 50 in December 1945, including 16 tailing mills. The mine mills, a number of which treated company and custom ore, together served about 170 mines operated by 75 companies.

Mine production of lead and zinc in the Tri-State region
(preliminary figures) 1946 by areas, in short tons

	Material treated		Concentrates		Recoverable metal	
	Crude ore	Old tailings	Lead	Zinc	Lead	Zinc
Kansas............	2,778,000	1,382,000	9,980	85,632	7,591	46,173
Southwestern Missouri........	1,710,000	363,000	4,380	40,258	3,280	21,320
Oklahoma..........	3,721,000	8,437,000	17,340	132,810	13,170	71,000
Total: 1946......	8,209,000	10,182,000	31,700	1/258,700	24,041	138,493
1945......	7,441,345	11,271,347	31,844	2/259,001	23,556	139,274
Increase or decrease, 1946...........	+767,655	-1,089,347	-144	-301	+485	-781

1/ Includes 33,738 tons from old tailings.
2/ Includes 41,211 tons from old tailings.

The weekly quoted price of zinc concentrates at Joplin in 1946 was $50 a ton from January 5 to October 26, $54 from November 2-9, and $64 from November 16 through December. The quoted price of lead concentrates was $76.01 a ton from January 5 to June 1, $99.96 the rest of June, $117.96 from July 6-27, $99.90 from August 3 to November 9, $132.30 on November 16, $151.02 from November 23 to December 14, and $160.50 (the highest on record) on December 21. Government premium payments continued on essentially the same basis as in 1945 except that producers who began operating after October 27, 1943, became eligible for the same premiums as old producers. The maximum "B" lead premium was expanded an additional $41.80 a ton of concentrates, and an exploration premium of $10.80 a ton for zinc concentrates and $15.20 for lead concentrates was established. After ceiling prices were abolished November 9, premiums were computed on the basis of market prices and were assigned in terms of dollars per ton of concentrate instead of A, B, or C quotas.

Since 1918 the Oklahoma-Kansas or Picher field has produced most of the Tri-State output of zinc and lead. Other producing areas in 1946 included Duenweg, Galena, Granby, Joplin, Oronogo, Ozark-Howell County (Alice Mine), Stark City, Thoms Station, Waco, Webb City, and Wentworth. The Eagle-Picher Mining & Smelting Co. was the largest individual producer of both zinc and lead in the district. The company operated about 26 mines in the Picher, Galena, and Oronogo areas and its 15,000-ton Central mill at Cardin (Okla.) on company account and the Paxson mine group and mill as agent for the Reconstruction Finance Corporation. The Central mill treated about 3,455,000 tons of combined company and custom ore. The number of custom shippers to the mill in 1946 is not yet available; in 1945 there were 39 companies operating altogether about 53 mines.

The St. Louis Smelting & Refining Co. was the second-largest producer of zinc; it operated 7 mines and a central mill near Baxter Springs and 3 to 5 mines and a central mill at Waco. Both mills handled company and custom ore.

The Federal Mining & Smelting Co. ranked third in zinc production, and preliminary data indicate that it ranked second in lead production, although outputs from the Kansas Explorations, Inc., and the United Zinc Smelting Corporation were nearly as large. The Federal operations comprised a group of mines and a mill each at Duenweg and Granby and 3 mines in the Picher area shipping to the Central mill.

Other large producers from mine dirt included the American Zinc Co., Beck Mining Co., Cameron & Henderson, C. G. & C. Co.; the Davis Big Chief, Dines, F. W. Evans, Harris, Lula Bell, Mahuska, Marcia K., Mark Twain, MacArthur, M.& W., Oronogo Mutual, and Robinson mining companies; the Rialto Mining Corporation; and the Scott, Stotts City, Weidman, and W. M. & W. mining companies. The Mission, Playter, St. Louis Mining & Milling, Wade-Rea, and Northside (C.G.& C.) mills treated company and custom ore, and the Fenix and Martin, Southside (Mess Cave), and Southwest mills treated company ore. The Barr Cleanup mill continued active. Operating tailing mills included the Atlas, Big Chief, Britt & Britt, C. G. & C., Cardin Nos. 2, 3, Captain, and Western, Evans-Wallower No. 4, Missouri Chitwood, Semple (Martin), and Tri-State Zinc Ottawa and Sooner. The American Zinc mine mill at Aurora was closed in August and dismantled. The Kansas Explorations Ritz mine mill and the Carson tailing mill were destroyed by fire.

A new large producer opened in 1946 was the Eagle-Picher Foley-Mullen mine north of Picher in Kansas. The ore is mined through a new shaft 450 feet deep, the deepest shaft in the district. New shafts were sunk on the American Zinc No. 7, Birthday (Marcia K), Buffalo (Eagle-Picher), Evans Wallower No. 4, Stoskopf (Dines), and Sparlin (MacArthur) properties. Work on sinking a new 426-foot shaft on the Vanatta (Childress) lease northeast of the Park Walton mine near Melrose began November 6. Although prospect drilling lagged, considerable drilling was done to develop extensions of ore bodies. The Bureau of Mines did churn drilling in the Melrose, Galena, Racine, Thoms Station, and Picher (Kansas part) areas.

Arkansas. - About 377 tons of zinc carbonate concentrates and 2 tons of lead concentrates were shipped from Arkansas in 1946 compared with 852 tons (nearly all carbonate) and 1 ton, respectively, in 1945. The producing mines were the Big Hurricane in Searcy County, Mine 16 in Marion County, and the Brewer in Newton County.

Illinois. - The output of recoverable lead in Illinois was 3,931 tons and that of zinc 8,771 tons in 1946 compared with 3,005 and 8,310 tons, respectively, in 1945. In Northern Illinois (part of the Upper Mississippi Valley region) the Tri-State Zinc, Inc., continued to operate the Gray mine and flotation mill and in June expanded its operations to include the newly developed Bautsch mine. The Big Six (North Unity), Bennett (South Unity), and Ginte mines shipped ore to the Vinegar Hill custom flotation mill at Cuba City, Wis. The Ginte mine and jig mill were closed in February. The Eagle-Picher Mining & Smelting Co. carried on exploratory drilling north of Galena. The Bureau of Mines continued drilling on a small scale to aid in investigating the mineral resources of the area.

In Southern Illinois the Mahoning Mining Co., operating fluorspar-zinc-lead mines in the Cave in Rock area and a flotation mill at Rosiclare, was the largest producer of zinc and lead. Besides company ore, the mill treated ore and bulk concentrates containing zinc, lead, and fluorspar from other mines in Illinois and Kentucky. The Minerva Oil Co. fluorspar-zinc mine and flotation mill north of Cave in Rock were operated steadily. The Alco Lead Co. operated an open-pit lead (mostly carbonate) mine and gravity-concentration mill near Elizabethtown.

Kentucky. - Mines in Kentucky produced about 273 tons of recoverable zinc and 120 tons of lead in 1946 compared with 182 and 129 tons, respectively, in 1945. The K. T. Dome Mining Syndicate operated the old Gratz zinc-lead mine and 50-ton mill at Gratz in Owen County. Some of the fluorspar producers in Crittenden and Livingston Counties shipped byproduct lead and zinc concentrates to smelters and byproduct material containing zinc, lead, and fluorspar to the Mahoning mill at Rosiclare, Ill.

Wisconsin. - The Wisconsin zinc and lead mining area is in the Upper Mississippi Valley region, which includes adjacent parts of Illinois and Iowa. The Iowa part has had no production since 1917. Since 1942 part of the crude ore produced in the region has been purchased by the Metals Reserve Company and stockpiled at the Vinegar Hill Zinc Co. custom flotation mill at Cuba City, Wis. The metal output from the stockpiled ore is credited to the production of the year in which the ore is milled rather than to the year in which it is mined. The total regional output of finished (60-percent) zinc concentrates was about 32,900 tons and lead concentrates 2,500 tons in 1946 compared with 34,758 and 3,011 tons, respectively, in 1945.

Output in the Wisconsin area alone in 1946 was about 25,740 tons of finished zinc concentrates and 2,176 tons of lead concentrates compared with 28,032 and 2,363 tons, respectively, in 1945. The Vinegar Hill mill, principal producer of finished concentrates in the region, treats crude ore and bulk zinc-iron-lead concentrates purchased from operators in both Wisconsin and Northern Illinois. Besides zinc and lead concentrates, the mill produces iron concentrates used in making sulfuric acid in the company plant adjoining the mill. The larger Wisconsin shippers to the mill in 1946 included the following mining companies: C. F. & H. (Mulcahy mine), Cuba (Andrews), Deuce (New Harty), Fox (Cottingham), Gill Bros. (James), Hofer (Boyle), Kittoe, Little Benny (Monroe), Little Grant (Arensdorf & Murray), Meloy & Baker (Crahall, Hoskins, Martin), New Lucky Hit (Coughlin, Wilkins), North Star, Harold Reinke Partnership (Federal), and Thompson.

Other mills making finished concentrates were the Dodgeville Mining Co. and W. E. Faithorn mine mills, the Chestnut Hill Zinc Co. and Northwest Zinc Co. tailing mills, and the Coker mill. The Coker mill was operated by the United Mining & Milling Co. on old tailings until August 25, when the company completed running its tailing reserve and ceased operations. The mill was then taken over by the Inland Lead & Zinc Co., which had been doing development work on the Coker group of mines. The new company installed crushing equipment in the mill and treated mine ore from the Coker group.

From August through December the Bureau of Mines conducted field investigation on the mineral resources of the Wisconsin area; the work included diamond drilling in the vicinity of Fairplay, begun November 19.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

For release January 15, 1947.

Mineral Market Reports
MMS No. 1484.

METAL MINING IN MONTANA, 1946 - PRELIMINARY ANNUAL FIGURES

A 220-percent increase in yield of placer gold in Montana in 1946, compared with 1945, accompanied by an 8-percent increase in yield of lode gold, pushed State output of the metal to the highest figure since 1942, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. The over-all rise of 54 percent in gold production in 1946 was in strong contrast to the performance of the other four metals, which showed moderate to marked declines from 1945. Silver registered the largest drop, output in 1946 being 47 percent below that in 1945; copper decreased 36 percent; lead, 11; and zinc, 9.

Increases in the average prices of all metals except gold had slight effect in resisting the four-year downward trend in total value of the five metals, which declined 18 percent from $35,405,505 in 1945 to $28,974,160 in 1946. Of the total value in 1946, copper contributed 63 percent, zinc 14, silver 9, gold 8, and lead 6.

Based on reports by operators and receipts at smelters and Mint Offices for 10 months of the year and with November and December estimated from other sources of information, preliminary figures for 1946, with comparative figures for 1945, are given below.

Mine production of gold, silver, copper, lead, and zinc in Montana, 1945-46, in terms of recovered metals

Metals	1945		1946	
	Quantity	Value	Quantity	Value
Gold, fine ounces..........	44,597	$ 1,560,895	68,600	$ 2,401,000
Silver, fine ounces.......	5,942,070	4,225,472	3,170,000	2,561,360
Copper, pounds............	177,012,000	23,896,620	113,700,000	18,305,700
Lead, pounds..............	19,998,000	1,719,828	17,700,000	1,787,700
Zinc, pounds..............	34,806,000	4,002,690	31,600,000	3,918,400
Total value.............	-----------	35,405,505	-----------	28,974,160

The value of the metals produced in 1946 has been calculated at the following prices; corresponding prices for 1945 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.808 per fine ounce ($0.711+); copper, $0.161 per pound ($0.135); lead, $0.101 per pound ($0.086); zinc, $0.124 per pound ($0.115). The weighted average prices for base metals in both years include bonus payments for overquota production.

Prepared by C. E. Needham and **Paul Luff**, Salt Lake City Office, Metal Economics Division, Economics and Statistics Branch.

Chief among the causes for the continued decline in production of silver and base metals was the persistence in the manpower shortage at mines, mills, and smelters in the State. Toward the close of the year labor became more plentiful; but it was reported that at Butte alone 3,000 men were needed to reach normal capacity.

In addition to insufficient manpower, labor difficulties were a factor in reducing metal production in Montana in 1946, although such difficulties were much less serious than in some other States. In April a strike lasting 10 days was called at the operations of the Anaconda Copper Mining Co. at Butte. Copper production for the month was seriously curtailed, output dropping 70 percent below that for the pervious month. Late in February a strike became effective at 18 plants of the American Smelting & Refining Co. in 12 States. Although this strike action affected operations for five months at the company lead smelter at East Helena, mine production of lead in the State was not greatly hampered as most large producers were able to stock pile their concentrates for future shipment.

Milling and smelting

The 12,320-ton copper concentrator, the 2,000-ton zinc concentrator, and the 2,000-ton slime-disintegrating plant of the Anaconda Copper Mining Co., all at Anaconda, were operated continuously in 1946, but at reduced rates. The company copper smelter (annual capacity, 1,300,000 tons of charge) and the two electrolytic zinc plants at Anaconda and Great Falls (combined capacity, 233,400 tons of slab zinc per year) also were operated throughout the year. The zinc plants treated 400,500 tons of zinc concentrates containing 432,900,000 pounds of zinc, compared with 394,110 tons containing 425,699,262 pounds of zinc in 1945. The concentrates were received from mills in Idaho, California, Montana, Nevada, New Mexico, Utah, Colorado, Washington, and several foreign countries. The company zinc-fuming plant at East Helena was operated throughout the year but at a lower rate than in 1945. Average capacity remained at 16,500 tons of slag per month. Hot slag and cold slag treated at the plant in 1946 totaled 160,000 tons compared with 197,244 tons in 1945; output of zinc-lead fume decreased from 32,233 tons in 1945 to 25,800 tons in 1946. Nearly all the fume was treated at the Great Falls zinc smelter.

The lead smelter of the American Smelting & Refining Co. at East Helena was affected by the long-drawn labor strike mentioned earlier in this report. During the period of its operation the plant treated chiefly lead-silver concentrates from the Coeur d'Alene region in Idaho and the Loomis-Oroville district in Washington; residues from the electrolytic zinc plants at Anaconda and Great Falls; and crude ores, concentrates, and old tailings from various districts in Montana.

Gold

Base-metal mines no longer supplied the greater part of Montana gold production in 1946, as the gold-mining industry recovered a considerable part of its former importance. Of particular significance was the marked increase in output of placer gold through the resumption of a number of dredge operations, although lode-gold mining also recorded gains. In 1946 lodes supplied 37,600 ounces of gold, and placers 31,000, compared with 34,907 ounces and 9,690 ounces, respectively, in 1945. Siliceous ores yielded more than twice as much gold in 1946 as did base-metal ores.

The leading State gold producers in 1946 in order were: Winston Bros., idle since October 1942, operating a bucket dredge in Jefferson County from March through the rest of the year; Jardine Mining Co. (gold ore) in Park County; Porter Bros., bucket dredge in Lewis and Clark County; Anaconda Copper Mining Co. (copper ore and waste materials) at Butte and Anaconda; H. and H. Mines, bucket dredge in Granite County; Montana Rainbow Mining Co. (gold ore) in Lewis and Clerk County; Canusco, Inc., a new producer, dredge in Missoula County; Emigrant Dredging Co., idle since October 1942, bucket dredge in Park County, beginning in May; Ruby Gulch Mining Co., idle since August 1942, (gold ore) in Phillips County; Douglas Placers, idle since October 1942, dragline dredge in Broadwater County, beginning in April. These 10 producers supplied 68 percent of the State total gold in 1946.

Gold output in 1946 by the Anaconda Copper Mining Co. from company copper ore and waste materials was reduced 50 percent from that in 1945; the Jardine Mining Co. held at virtually its 1945 level; but the Montana Rainbow Mining Co. increased its gold output nearly 700 percent.

Silver

The slump of about 2,770,000 ounces from the 1945 output of 5,942,070 ounces brought Montana production of silver to the lowest figure since 1933. Most of the loss resulted from a decrease of over 50 percent in the yield of silver from the copper-producing operations of the Anaconda Copper Mining Co. at Butte and Anaconda. However, company copper ore and waste supplied over 64 percent of the State total silver in 1946. Other important sources of silver included the Emma mine at Butte, the Mike Horse mine near Flesher, the Travona mine at Butte, the operations of the Montana Leasing Co. near Neihart, the North Butte mine at Butte, and the Toledo-Buckeye group near Sheridan. These seven producers contributed about 77 percent of the State total silver in 1946. Of this group only the Montana Leasing Co. recorded a gain over its 1945 output. Siliceous ores were not an important source of silver during the year.

Copper

For the fourth consecutive year Montana copper output declined in 1946. The marked decrease was due largely to a sharp reduction in tonnage of crude copper ore and waste material from the properties of the Anaconda Copper Mining Co. at Butte and Anaconda. The company supplied about 96 percent of the State total copper, and the North Butte mine at Butte furnished about half of the remainder. Smaller producers included the Emma, Mike Horse, and Travona mines.

Recoverable gold, silver, copper, lead, and zinc from Butte in 1946 were valued at about $22,100,000, or 76 percent of the State total of the five metals. In 1945 the value was $30,179,133.

Lead

The decrease in 1946 of 2,300,000 pounds in Montana lead output, compared with 1945, was rather uniformly distributed among all the larger producers, with the exception of the slag-fuming plant of the Anaconda Copper Mining Co. at East Helena where a gain in lead output occurred. The Mike Horse mine near Flesher again was the leading State producer, followed in order by the Emma mine at Butte, the slag-fuming plant at East Helena, the Jack Waite mine in Sanders County, the Toledo-Buckeye group near Sheridan, and the Poulin and Travona mines at Butte. These seven sources contributed about 13,500,000 pounds of lead in 1946, or 76 percent of the State total.

Zinc

Zinc production in Montana in 1946 held steadier than any of the other five metals except gold, and State output fell 3,200,000 pounds below that in 1945. The slag-fuming plant of the Anaconda Copper Mining Co. at East Helena recorded an increase of recoverable zinc creditable to Montana, as did the Broadwater group near Neihart, but all other important producers experienced declines. The slag-fuming plant was the leading source of zinc in 1946, followed in order by the Emma, Mike Horse, Poulin, Toledo-Buckeye, Travona, Broadwater, and Forest Rose properties. These eight properties supplied over 94 percent of the State total zinc. Zinc-producing properties owned or controlled by the Anaconda Copper Mining Co.--including the slag-fuming plant at East Helena, the Emma, Poulin, Travona, and all other zinc mines at Butte--contributed a total of about 77 percent of the State total zinc in 1946.

Mine production of gold, silver, copper, lead, and zinc in Montana in 1946, by months[1/], in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January.............	3,855	345,000	12,100,000	1,550,000	2,200,000
February............	3,200	280,800	10,700,000	1,360,000	2,470,000
March...............	3,925	266,200	10,700,000	1,340,000	3,700,000
April...............	4,335	100,000	3,240,000	1,000,000	2,500,000
May.................	6,960	215,000	9,600,000	1,250,000	2,900,000
June................	5,800	260,000	9,300,000	1,710,000	3,000,000
July................	7,125	280,000	9,800,000	1,680,000	2,280,000
August..............	7,250	300,000	9,900,000	1,680,000	2,900,000
September...........	6,800	276,000	9,260,000	1,280,000	2,600,000
October.............	7,050	290,000	9,800,000	1,700,000	2,400,000
November............	6,300	275,000	9,600,000	1,500,000	2,200,000
December............	6,000	282,000	9,700,000	1,650,000	2,450,000
	68,600	3,170,000	113,700,000	17,700,000	31,600,000
Total 1945..........	44,597	5,942,070	177,012,000	19,998,000	34,806,000

1/ Revised figures.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary **R. R. SAYERS, Director**

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For release January 15, 1947.

MINERAL MARKET REPORT
NO. M. M. S. 1485

METAL MINING IN CALIFORNIA, 1946 - PRELIMINARY ANNUAL FIGURES

Gold production in California in 1946 increased 135 percent over 1945, and silver output rose 39 percent above the previous year, according to the San Francisco office of the Bureau of Mines, United States Department of the Interior. Lead production increased to the highest point since 1917, but copper and zinc outputs were considerably lower in 1946 than in 1945.

California lode and placer mines in 1946 yielded (in terms of recoverable metals) 348,100 fine ounces of gold valued at $12,183,500 (147,938 ounces valued at $5,177,830 in 1945), 1,368,500 fine ounces of silver valued at $1,105,748 (986,798 ounces at $701,723), 6,510,000 pounds of copper valued at $1,048,110 (12,946,000 pounds at $1,747,710), 20,130,000 pounds of lead valued at $2,033,130 (14,448,000 pounds at $1,242,528), and 14,210,000 pounds of zinc valued at $1,762,040 (19,846,000 pounds at $2,282,290). These preliminary figures are based on 10 months' actual mine production with estimates for November and December.

The average prices used by the Bureau of Mines in calculating the gross value of the outputs of the metals were: Gold $35.00 per fine ounce in 1945 and 1946; silver $0.711+ per fine ounce in 1945 and $0.808 in 1946; copper $0.135 a pound in 1945 and $0.161 in 1946; lead, $0.086 a pound in 1945 and $0.101 in 1946; and zinc, $0.115 a pound in 1945 and $0.124 in 1946. The base metal prices are weighted yearly averages including premium payments made under the Premium Price Plan. The total value of the five metals in 1946 was $18,132,528 compared with $11,152,081 in 1945, an increase of 63 percent owing almost entirely to the gain in gold output which more than offset the loss in production and value of copper and zinc.

Gold production from California mines gained rapidly during the first three months of 1946 to continue the swing upward which began in July 1945, following the revocation of War Production Board Order L-208. From March through July the monthly output remained relatively unchanged at about 29,000 ounces. Following a rise to 33,500 ounces in August, the monthly rate of production again leveled off for the balance of the year.

Although complete data for classifying gold production are not available it appears that placer mines contributed approximately 75 percent of the 1946 output and lode mines 25 percent, compared with a placer-lode ratio of 63 percent to 37 percent in 1945. The major part of the placer production in 1946 came from connected-bucket dredges.

Prepared by Alfred L. Ransome, San Francisco Office, Metal Economics Division, Economics and Statistics Branch.

The Yuba Consolidated Gold Fields operated five dredges (Nos. 14, 15, 17, and 20 all year and No. 18 part time) in the Yuba River district, Yuba County during 1946, two in Butte County, (not concurrently) and one in Siskiyou which discontinued operations in April. The Natomas Co., operated its entire fleet of seven dredges in the Folsom district, Sacramento County during 1946. The Gold Hill Dredging Co. operated two dredges on the Mokelumne River, Camanche district, San Joaquin County, and one dredge on the Feather River, Oroville district, Butte County. Connected-bucket dredges were operated also by the Merced Dredging Co., and the Snelling Gold Dredging Co., Snelling district, Merced County; Capital Dredging Co. and the Lancha Plana Gold Dredging Co., Folsom district, Sacramento County; French Gulch Dredging Co., French Gulch district, and Thurman Gold Dredging Co., Igo district, Shasta County, Yreka Gold Dredging Co., Klamath River district, Siskiyou County; the La Grange Gold Dredging Co., and the Tuolumne Gold Dredging Co., La Grange district, Stanislaus County; and the Junction City Mining Co., Junction City district, Trinity County. Numerous placer gold mining companies using dragline equipment commenced work in 1946. Most of the companies had operated prior to the gold mine closing Order L-208 but had not resumed mining soon after the lifting of the Order in 1945 owing to the difficulty in obtaining equipment. Several hydraulic operations were active during 1946, and gold was produced by the Morris Ravine Mining Co. at its drift mine in the Oroville district, Butte County. Several gravel companies continued to report the recovery of gold as a byproduct of their operations, and small-lot shipments of placer gold increased in 1946.

Gold production at lode mines increased in 1946 largely owing to expanded output at a few of the larger properties. The total would have been considerably greater but for the suspension of operations at the Empire Star Mines Co., Ltd. properties in the Grass Valley-Nevada City district, Nevada County on July 1. Inability to operate profitably under existing conditions of high cost of labor and supplies was the principal reason for the shutdown, and also was why many other former producers had not reopened since the war. In 1945, lode gold derived from gold ores accounted for 86 percent of the total lode gold produced, and 14 percent was recovered from ore mined primarily for copper, lead, zinc, and other base metals. Preliminary figures indicate that in 1946 the ratio was about the same. Approximately two-thirds of the gold from gold ore produced in California in 1946 was mined in the Grass Valley-Nevada City district, Nevada County, almost entirely by the Idaho Maryland Mines Corporation and the Empire Star Mines Co., Ltd. In the Washington district of Nevada County the Ancho-Erie Mining Co. was a substantial producer during 1946. In the Mother Lode Counties, the larger shipments of gold derived from gold ore were made by the Mount Gaines Mining Co., Hunter Valley district, Mariposa County, and the Eagle Shawmut Mine, Mother Lode district, Tuolumne County. Burton Bros., Inc. cyanided gold ore from the Tropico mine, Mojave district, Kern County and recovered over 1,000 ounces of gold. The Original Sixteen to One Mine, Inc. operated the Original Sixteen to One mine, Alleghany district, Sierra County throughout the year. Also in Sierra County, but in the Downieville district, the Brush Creek mine operated by Alfred L. Merritt showed a substantial production. Of the mines that operated chiefly for base metal in 1946, only the Penn mine, Campo Seco district, Calaveras County, operated by the Shawmut Copper Mine Co. (formerly Eagle Shawmut Mine) yielded more than 1,000 ounces of gold.

Three quarters of the 1946 California silver production of 1,368,500 ounces was derived from argentiferous lead and lead-zinc ores. The principal producers from such ores were the Anaconda Copper Mining Co., operating the Darwin mines, Coso district, Inyo County, and the Finley Co., operating the Columbia No. 2 mine, Resting Springs district, Inyo County. Other large silver producers were: The Mountain Copper Co., Ltd., Hornet mine, Flat Creek district, Shasta County (zinc-copper ore); the Shawmut Copper Mine Co., Penn mine, Campo Seco district, Calaveras County (zinc ore); and Frank W. Royer, Kelly mine, Randsburg district, San Bernardino County (gold-silver ore). Much of the remainder of California 1946 silver was produced from other base metal ores including copper and tungsten ores.

California copper production dropped from 12,946,000 pounds in 1945 to 6,510,000 pounds in 1946, the lowest since 1942. The Mountain Copper Co., Ltd., the largest producer in the State in 1946 accounted for nearly two-thirds of the State's copper production. The company continued mining the Mattie zinc-copper ore body at the Hornet mine, Flat Creek district, Shasta County, making shipments of copper and zinc concentrates. During 1946 the Winston Copper Co. (Pacific Mining Co. lease) continued to operate the Newton copper mine, Ione district, Amador County, which ranked second in copper output in California. Additional quantities of copper concentrates were recovered also from zinc ore mined by the Shawmut Copper Mine Co., Penn mine, Campo Seco district, Calaveras County, which took third place among copper producers of the State in 1946.

The Anaconda Copper Mining Co. produced more than three quarters of the 20,130,000-pound lead output of California in 1946 from the Darwin mine, Coso district, Inyo County. Most of the lead was recovered from direct smelting ore, although a flotation lead concentrate was produced. The Finley Co., operator of the Columiba No. 2 mine, Resting Springs district, Inyo County again ranked second in output, and Dunton-Ray & Greenwood, Mohawk mine, Clark Mountain district, San Bernardino County, third. A substantial quantity of lead was recovered by L. D. Foremen from operations at the Modoc property, Modoc district, Inyo County.

The largest producer of zinc in 1946 was the Shawmut Copper Mine Co., operator of the Penn mine, Campo Seco district, Calaveras County; more than half the State's output of zinc came from this property. Production of zinc concentrate by the Mountain Copper Co., Ltd., from ore of the Mattie ore body in the Hornet mine, Flat Creek district, Shasta County, continued throughout 1946 at a greater rate than in 1945 and placed the operation second in rank as a zinc producer in the State. Zinc was also recovered from zinc-lead ore shipped for direct smelting by the Anaconda Copper Mining Co. from its Darwin mine throughout the year — a smaller quantity of zinc was recovered from lead concentrates produced by the company from its flotation mill on the property. Dunton-Ray & Greenwood, operator of the Mohawk mine, Clark Mountain district, San Bernardino County, produced lead-zinc ore during 1946; the material was shipped to a smelter and a substantial quantity of zinc recovered.

Mine production of gold, silver, copper, lead, and zinc in California in 1946, by months 1/, in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January......	20,100	130,000	390	1,100	760
February.....	23,000	76,000	300	700	525
March........	29,000	92,000	350	940	565
April........	27,500	91,500	400	950	770
May..........	29,000	79,000	350	740	720
June.........	28,500	80,000	330	700	715
July.........	29,000	84,000	270	750	560
August.......	33,500	83,000	200	700	530
September....	33,000	135,000	175	730	460
October......	32,000	160,000	190	830	500
November.....	31,500	178,000	150	950	500
December.....	32,000	180,000	150	975	500
	348,100	1,368,500	3,255	10,065	7,105
Total, 1945	147,938	986,798	6,473	7,224	9,923

1/ Revised figures.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

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MINERAL MARKET REPORTS
MMS NO. 1486

MINE PRODUCTION OF COPPER IN THE UNITED STATES IN 1946 - PRELIMINARY ANNUAL FIGURES

In 1946, for the seventh successive year, requirements for copper called for capacity domestic mine production, but as in 1945 and several earlier years, labor problems prevented maximum production, according to the Bureau of Mines, United States Department of the Interior. Production in 1946 was 22 percent less than in 1945 and 45 percent below the all-time peak established in 1943. For several years the supply of labor had been inadequate, but in 1946 this continuing problem was overshadowed by strikes at mines, smelters and refineries. From January to the end of June the largest copper mine in the country was closed by a strike. From the latter part of February to the end of June the largest group of smelters and refineries was closed and other plants joined this group for most of the period. Several chief mines in Arizona were down for more than three months and the coal strike caused a closure of the Lake properties for over one month. As a consequence chiefly of the foregoing strikes mine production in April to June averaged less than half of the output for the same period in 1945.

Comparing 1946 with 1945 all important areas showed noteworthy declines in output, except Arizona where production gained 1 percent. Arizona again led all other States in copper production and because some of the large mines there were unaffected by strike activity this State greatly advanced its leadership over second-place Utah. Output in Utah is dominated by one mine, the Utah Copper Co. property at Bingham, which was closed for more than 5 months of the year. Utah's output declined 52 percent in 1946. Arizona accounted for 48 percent of the United States' total in 1946 and Utah, 18 percent, compared with 37 and 29 percent, respectively, in 1945. Montana again ranked third; largely as a result of chronic labor shortage but also because of a short-lived strike it produced 36 percent less copper in 1946 than in 1945 and not quite half as much as in 1944. Nevada and New Mexico performed better than most other large copper-producing areas, having declines of only 9 and 11 percents, respectively. Michigan production dropped 28 percent in 1946 being adversely affected by the idleness throughout the year of the Copper Range and Quincy mines, substantial producers until August 1945. In addition, the bituminous coal strike caused the reclamation plants and all but one Michigan mine to be inactive for 5 weeks because of curtailment in power generation.

Prepared by Helena M. Meyer, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

The ceiling price for electrolytic copper was 12 cents a pound, delivered Connecticut Valley, from August 12, 1941 through May 1946. The ceiling was raised, effective June 3, to 14 3/8 cents for producers who had signed approved wage contracts since February 14, 1946 and simultaneously "A" premiums were reduced 2 3/8 cents a pound. Later in the year the ceiling price became general at 14 3/8 cents. A bill to extend the Office of Price Administration was vetoed by the President and for most of the month of July there were no ceiling prices, and copper producers were reluctant to sell at firm prices. The Premium Price Plan expired with the Office of Price Administration, but after the OPA was extended, effective July 26, provisions were made for retroactive premium payments to cover the period when no plan was in effect. The discarding of ceiling prices on most commodities in November was followed by a sharp rise in the price for copper to 17 1/2 cents a pound. After the Reconstruction Finance Corp. discontinued the making of foreign copper purchase contracts in November, and the excise tax again became applicable to imports by private industry, domestic producers raised their price to 19 1/2 cents a pound, at which level it remained to the end of the year. The estimated average weighted price for copper delivered, f.o.b. refinery and including allowance for premiums paid for overquota production, was 16.1 cents a pound in 1946 compared with 13.5 cents in 1945.

This report which summarizes mine output for 1946 is part of the regular monthly copper mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1947. The following table and State reviews for 1946 were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable copper content of ores and concentrates.

Arizona.--The 1 percent gain in production of copper in Arizona, in 1946 compared with 1945 was in contrast to the trend in all other important copper-producing States, where output declines ranged from 52 percent in Utah to 9 percent in Nevada. Arizona's larger tonnage was produced despite labor strikes extending more than three months at several of the chief properties. The Morenci mine, Copper Mountain district, continued to be by far the largest copper-producing mine in the State and was followed in 1946 by the New Cornelia, Ajo district; Inspiration, Castle Dome and Miami mines, Globe-Miami district; Kennecott (Ray Mines), Mineral Creek district; United Verde, Verde district; Magma, Pioneer district; Bagdad, Eureka district; and Copper Queen, Warren (Bisbee) district. The total output of copper ore for the State dropped from 30,644,470 tons in 1945 to 30,200,000 tons in 1946. Of the total copper produced in Arizona in 1946 the Copper Mountain (Morenci) district contributed 33 percent; the Globe (Inspiration-Miami), 30 percent; the Ajo, 16 percent; the Verde, 6 percent; the Mineral Creek (Ray), 5 percent; the Pioneer (Superior), 4 percent and the Warren (Bisbee), 2 percent.

California.--Production dropped from 6,473 tons in 1945 to 3,255 tons in 1946, the lowest output since 1942. The Mountain Copper Co., Ltd., mining the Mattie zinc-copper orebody at the Hornet mine, Flat Creek district, Shasta County, accounted for nearly two-thirds of the State's copper production.

Colorado.--The rate of output of copper in Colorado in 1946 was virtually unchanged from 1945 in contrast with the important copper-producing areas, where sharply declining rates were almost without exception. There was no large copper producer in Colorado in 1946.

Eastern States.--Against the trend in most areas, production of copper increased slightly in 1946. The principal producer of copper continued to be the Tennessee Copper Co., which operated in the Ducktown-Copperhill district of Tennessee. In Vermont the Elizabeth mine, in Orange County, was operated continuously by the Vermont Copper Co., Inc. and produced 62 percent more copper than in 1945. In Pennsylvania the Bethlehem Steel Co. continued to recover copper as a byproduct from iron (magnetite-pyrite-chalcopyrite) ore from the Cornwall mine in Lancaster County.

Michigan.--Production of copper decreased from 30,401 tons in 1945 to 21,787 in 1946 chiefly because the Quincy and Copper Range mines, substantial producers until August 1945, were idle throughout 1946. A five-week period of idleness at reclamation plants and all but one of the active mines, because of a shortage of coal owing to the coal strike, accentuated the drop in 1946. The Calumet and Hecla Consolidated Copper Co. was again the largest producer and its smelter treated the entire Michigan output of concentrates and mass copper during the year; the Copper Range smelter was inactive throughout 1946. The Isle Royale mine produced 16 percent more copper than in 1945 and the Quincy reclamation plant nearly equaled its 1945 rate of operation except during the 5-week inactive period already mentioned.

Missouri.--Production dropped from 3,399 tons of copper in 1945 to 1,850 tons in 1946.

Montana.--Montana was less affected by labor strikes in 1946 than were the more important copper-producing areas, Utah and Arizona. Production in Montana is dominated by the Anaconda Copper Mining Co. whose mines were closed by strike action for ten days in April only. Montana's outstanding problem was a continuing severe labor shortage and during the year it was reported that at Butte alone 3,000 men were needed to reach normal capacity. Production of copper declined 36 percent in 1946 and amounted to only 40 percent of the recent high output of 141,194 tons in 1942. The Anaconda Copper Mining Co. supplied about 96 percent of the State total and the North Butte mine at Butte furnished about half of the remainder.

Nevada.--Nevada copper production continued the decline in effect since the all-time record established in 1942. Of the recoverable copper output, approximately 98 percent came from the three leading producers in the order named, Kennecott Copper Corporation (Nevada Mines Division) which worked the Copper Flat open-pit mine and the Ruth mine and the nearby Consolidated Coppermines Corporation, Robinson district, White Pine County, and the Mountain City Copper Mining Co. property, Cope district, Elko County. A smaller output came from the Copper Canyon Mining Co. operation at Battle Mountain, Lander County.

New Mexico.--The Chino mine, of the Kennecott Copper Corp. in the Central district, Grant County, by far the outstanding producer of copper in New Mexico, operated without interruption in 1946, making it possible for this State to give a better performance than the country as a whole; production dropped only 11 percent compared with the decline of 22 percent for the United States as a whole. Other producers of copper included the Banner Mining Co. in Hidalgo County and the Phelps Dodge Corp. Burro Mountain property in the Burro Mountain (Tyrone) district, Grant County.

Utah.—Copper output in Utah comes largely from one property, the Utah Copper Co. mine at Bingham. The decline in output for the State, from 226,376 tons in 1945 to 109,000 tons in 1946, or to the smallest total since 1938, was the result largely of a labor strike lasting over 5 months at this mine, accentuated by the strike at the plant of the American Smelting & Refining Co. at Garfield, where the Utah Copper Co. ore is smelted. Despite the work stoppages, Utah continued to rank second in copper production in the United States, although its share of the total declined from 29 percent in 1945 to 18 percent in 1946. The Utah Copper Co. mine likewise continued to lead the country in copper production in 1946, but by a substantially reduced margin. During the strike period Utah's monthly output of copper dropped to about 2 percent of the rate for December 1945. Following the resumption of major operations in July, production advanced sharply, but a labor shortage of long standing prevented the attainment of capacity operations by the end of the year.

Mines other than the Utah Copper Co. that produced over a million pounds of copper in 1946 were the National Tunnel & Mines Co. property and the Columbia group of the Ohio Copper Co. both in the West Mountain (Bingham) district and the Big Indian property of the Ohio Copper Co. in the La Sal district.

The four properties listed accounted for nearly 99 percent of the State total. Copper ore treated in Utah totaled 11,980,000 tons compared with 23,978,159 tons in 1945.

Washington.—Copper production declined for the sixth successive year and was only 55 percent of the peak total for 1940. As in previous years, virtually all of the State copper came from the zinc-copper ore treated by flotation from the Holden mine in Chelan County. Ore output from the mine decreased from 617,100 tons in 1945 to about 563,000 tons in 1946 and the ore was slightly lower in copper content than in 1945. A chronic labor shortage impeded copper production in Washington in 1946.

Mine production of recoverable copper in the United States in 1946, by months 1/, in short tons

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total
Eastern States..	1,102	797	1,088	1,088	1,217	1,137	1,052	1,097	1,112	1,125	1,091	1,094	13,000
Central States..	2,004	1,897	2,264	2,336	1,229	1,310	1,962	2,129	2,156	2,033	2,139	2,178	23,637
Western States:													
Arizona.......	25,200	24,250	22,500	16,400	16,350	15,800	25,950	26,500	28,650	30,800	28,300	30,300	291,000
California....	390	300	350	400	350	330	270	200	175	190	150	150	3,255
Colorado......	125	103	118	131	121	110	176	130	100	131	127	120	1,492
Idaho.........	70	85	85	75	60	85	85	85	80	80	95	90	975
Montana.......	6,050	5,350	5,350	1,620	4,800	4,650	4,900	4,950	4,630	4,900	4,800	4,850	56,850
Nevada........	4,000	4,000	4,750	4,800	4,350	4,675	2,100	3,300	3,400	3,650	4,200	4,400	47,625
New Mexico....	4,534	4,072	4,367	4,317	3,936	4,023	4,446	4,138	4,085	4,195	4,000	4,100	50,213
Oregon........	-	-	-	-	(2)	-	(2)	(2)	3	-	1	-	4
Texas.........	2	-	-	-	-	-	-	2	-	-	-	-	4
Utah..........	10,930	300	370	375	370	305	12,300	13,725	17,400	17,700	17,425	17,800	109,000
Washington....	500	400	475	510	445	450	400	450	395	440	400	435	5,300
	51,801	38,860	38,365	28,628	30,782	30,428	50,627	53,480	58,918	62,086	59,498	62,245	565,718
Alaska.........	-	-	-	-	-	-	-	-	-	-	-	-	-
Total United States..	54,907	41,554	41,717	32,052	33,228	32,875	53,641	56,706	62,186	65,244	62,728	65,517	602,355

1/ Revised figures.
2/ Less than one-half ton.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary   R. R. SAYERS, Director

For Release January 15, 1947

MINERAL MARKET REPORT
MMS NO. 1487

METAL MINING IN NEVADA, 1946 – PRELIMINARY ANNUAL FIGURES

Production of zinc in Nevada in 1946 was the largest, both in quantity and value, in the history of the State, surpassing the previous record of 1945 by 7 percent in quantity and 16 percent in value, according to preliminary figures compiled by the San Francisco office of the Bureau of Mines, United States Department of the Interior. Gold output, on the other hand, was slightly below the total for 1945 and was the lowest in quantity since 1895. Copper was lower in quantity than in any year since 1938, but the value was higher than in 1945. Both silver and lead increased slightly in quantity over the totals for 1945, and in value to a considerably greater extent.

Mines in Nevada yielded (in terms of recovered metals) 88,500 fine ounces of gold valued at $3,097,500, 1,064,200 fine ounces of silver valued at $859,874, 95,250,000 pounds of copper valued at $15,335,250, 12,800,000 pounds of lead valued at $1,292,800, and 46,040,000 pounds of zinc valued at $5,708,960. The comparative outputs in 1945 were 92,265 ounces of gold valued at $3,229,275, 1,043,380 ounces of silver valued at $741,959, 105,190,000 pounds of copper valued at $14,200,650, 12,550,000 pounds of lead valued at $1,079,300, and 42,914,000 pounds of zinc valued at $4,935,110. Gold production decreased 4 percent in quantity and value, silver was up 2 percent in quantity and 16 percent in value, copper decreased 9 percent in quantity, but gained 8 percent in value, lead advanced 2 percent in quantity and 20 percent in value, and zinc increased 7 percent in quantity and 16 percent in value.

The average prices used by the Bureau of Mines in calculating the gross values of the outputs of the metals were: Gold, $35.00 per fine ounce in 1945 and 1946; silver, $0.711+ in 1945 and $0.808 in 1946; copper $0.135 per pound in 1945 and $0.161 in 1946; lead $0.086 per pound in 1945 and $0.101 in 1946; and zinc $0.115 per pound in 1945 and $0.124 in 1946. The total value of the five metals in 1946 was $26,294,384 compared with $24,186,294 in 1945, an increase of 9 percent.

Preliminary data for 1946 indicate that 85 percent of Nevada gold was produced at lode mines and 15 percent at placers compared with 90 and 10 percent, respectively, in 1945. Again in 1946 as in 1945 one-half of the State's total gold was derived from copper ores; nearly all copper ore was concentrated and the concentrates smelted. Gold ore, a large proportion of which was cyanided, yielded approximately one-fifth of the 1946 production of gold compared with 29 percent in 1945 and 42 percent in 1944. Most of the remaining gold in 1946 was derived from gold-silver ores, and zinc-lead ores though substantial quantities came from lead, silver, and other ores. These figures reflect an increase in gold production from gravels, but a decline in production from precious metal ores, as well as a somewhat lower yield of byproduct gold from base-metal ores.

Prepared by Alfred L. Ransome, San Francisco Office, Metal Economics Division, Economics and Statistics Branch.

The Kennecott Copper Corporation (Nevada Mines Division), a copper mine operator in the Robinson district, White Pine County, was Nevada's leading gold producer in 1946, accounting for roughly one-quarter of the State's gold output. Second place was again held by the Consolidated Coppermines Corporation, also a copper producer in the Robinson district, White Pine County. These two companies and the Copper Canyon Mining Co., operating the Copper Canyon mine, Battle Mountain district, Lander County, also a copper producer, supplied nearly half of Nevada's total gold in 1946. The Manhattan Gold Dredging Co. continued to operate its connected-bucket dredge in the Manhattan district, Nye County and with increased output easily attained third place as a gold producer in 1946. The Consolidated Chollar Gould & Savage Mining Co., operating the Overman mine, Comstock district, Storey County, ranked fourth as a producer of gold in 1946.

Other operations that produced over a thousand ounces of gold in 1946 included the Goldacres mine, Bullion district, Lander County, operated by the Willow Creek Mines, Inc. until September 30, 1946, and subsequently by the Consolidated Goldacres Co., owner; the Combined Metals Reduction Co. which derived its gold from argentiferou zinc-lead ores from a group of mines in the Pioche district, Lincoln County; and the Tonopah Divide Mine, Divide district, Esmeralda County.

Between 85 and 90 percent of Nevada's silver in 1946 was recovered from base metal ores. Somewhat less than half was derived from zinc-lead ore (compared with one third in 1945), and smaller quantities came from copper, lead, zinc, zinc-copper, and gold-silver ores. The leading producers of silver from zinc-lead ore were the Combined Metals Reduction Co., Pioche district, Lincoln County, Bristol Silver Mines Co., Bristol mine, Jack Rabbit district, Lincoln County, Prince Consolidated Mining Co., and the Ely Valley Mine, both in the Pioche district, Lincoln County, and the B. B. S. Mining Corporation, Simon Silver-Lead mine, Bell district, Mineral County. The leading producers of silver from lead ore were McFarland & Hullinger, Cleveland mine, Delano district, Elko County, and the Salt Lake-Pioche Mining Co. (including lessees), Financier and Apex mines, Pioche district, Lincoln County. Copper concentrates shipped to smelters from the Kennecott Copper Corporation (Nevada Mines Division) and the Consolidated Coppermines Corporation mines in the Robinson district, White Pine County, and the Copper Canyon Mining Co.'s Copper Canyon operation, Battle Mountain district, Lander County, were an important source of silver in 1946. Gold-silver ore mined principally by the Tonopah Mining Co., Tonopah district, Nye County, and the Consolidated Chollar Gould & Savage Mining Co., Overman mine, Comstock district, Storey County, was also an important source of silver.

Nevada copper production in 1946 continued the decline in effect since the all-time record of 1942. Of the recoverable copper output, approximately 98 percent came from the three leading producers in the order named, Kennecott Copper Corporation (Nevada Mines Division) which worked the Copper Flat open-pit mine and the Ruth mine, and the nearby Consolidated Coppermines Corporation, Robinson district, White Pine County, and the Mountain City Copper Mining Co. property, Cope district, Elko County. A smaller output was reported for the Copper Canyon Mining Co. operation at Battle Mountain, Lander County.

The Pioche district, Lincoln County, produced half of the lead and two-thirds the zinc in Nevada in 1946 according to preliminary data; all of the zinc and most of the lead was recovered from concentrates produced by the Combined Metals Reduction Co.'s Pioche mill. This mill operated on ore shipped to it by the company-operated Pioche No. 2 mine, Abe Lincoln Group, Amalgamated Leases, and Raymond Ely West mine, the Prince Consolidated Mining Co.'s, Prince mine, and the Ely Valley Mine's Ely Valley mine. The Salt Lake-Pioche Mining Co., the only other large producer in the district, shipped direct to a smelter argentiferous lead ore, mined on company account and by lessees, from the Apex and Financier mines.

In addition to the Pioche district mines there were a number of other lead, zinc-lead, and zinc-copper mines active in Nevada in 1946. The principal ones were: Bristol Silver Mines Co., Bristol mine, Jack Rabbit district, Lincoln County; Callahan Zinc-Lead Co., Mt. Hope mine, Eureka district, Eureka County; the Groom mine Groom district, Lincoln County, operated by the International Mining Corporation during the first half of 1946; B. B. S. Mining Corporation's Simon Silver-Lead mine, Bell district, Mineral County; the Cleveland mine, Delano district, Elko County, operated by McFarland & Hullinger; Nevada Lead Zinc Co., Nevada Lead mine, Spruce Mountain district, Elko County; the Columbia mine, Robinson district, White Pine County, operated by Sam Robinson; Sultan mine, Yellow Pine district, Clark County, operated by L. F. Jacobson; Union Lode mine, Galena district, Washoe County, operated by the Union Lead Mining & Smelting Co.; the Maybelle mine (tailings), Loray district Elko County, operated non-concurrently by Charles E. Roberts and L. D. Foreman & Co.; Argentena Consolidated Mining Co., Argentena mine, Yellow Pine district, Clark County the Yellow Pine mine, also in the Yellow Pine district, Clark County, operated by the Coronado Copper & Zinc Co.; and the Root zinc mine, Yellow Pine district, operated by the Root Zinc Co.

Mine production of gold, silver, copper, lead and zinc in Nevada in 1946, by months 1/ in terms of recovered metals

	Gold (Fine ounces)	Silver (Fine ounces)	Copper (Short tons)	Lead (Short tons)	Zinc (Short tons)
January......	6,800	87,000	4,000	550	1,850
February.....	7,400	84,700	4,000	550	1,980
March.........	7,200	79,800	4,750	500	2,240
April.........	8,500	77,000	4,800	500	2,420
May...........	6,800	82,500	4,350	575	2,590
June..........	7,400	83,600	4,675	410	2,040
July..........	5,500	96,500	2,100	440	1,600
August........	7,500	100,100	3,300	550	1,700
September....	7,000	98,000	3,400	550	1,550
October......	6,800	85,000	3,650	575	1,650
November.....	9,600	95,000	4,200	600	1,700
December.....	8,000	95,000	4,400	600	1,700
	88,500	1,064,200	47,625	6,400	23,020
Total 1945.	92,265	1,043,380	52,595	6,275	21,457

1/ Revised figures.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

For release January 20, 1947.

MINERAL MARKET REPORT
MMS NO. 1488.

MINE PRODUCTION OF GOLD IN THE UNITED STATES IN 1946
PRELIMINARY ANNUAL FIGURES

Recovery in the gold-mining industry which began with the recission, effective July 1, 1945, of the WPB gold-mine closing Order L-208 carried production to 1,503,553 fine ounces in 1946, 58 percent above that for 1945 but still only 31 percent of the recent high established in 1940, according to the Bureau of Mines, United States Department of the Interior. A review of the monthly output figures for 1946 shows a fairly regular expansion until September after which there was some decline due chiefly to the seasonal suspension of work in Alaska. In 1946 California regained its premier position as a gold producer, which it had held most of the time during the period from 1848 through 1942. Utah, which had ranked first in 1945, was outranked by South Dakota and Alaska as well as California in 1946 and held only a small lead over Colorado.

Expansion of output, particularly as a result of rehabilitating of idle connected-bucket dredges, was a major feature of the industry in 1946. In addition a number of other placer operations and many lode-gold mines reopened or expanded operations during the year. On the other hand, labor strikes at base-metal mines and smelters curtailed a source of production that had been a principal factor in sustaining output during the war years. The pressure of rising wages and prices was felt by all. The resulting higher costs restrained many prewar operators from reopening their properties. One large producer, the Empire Star Mines Co., Ltd., Grass Valley-Nevada City district, Nevada County, California, after limited operations during the war and the months following, suspended all production on July 1, 1946, and announced that postwar conditions made working unprofitable.

The price of gold remained unchanged at the Treasury buying rate of $35.00 an ounce whereas the prices of other metals rose substantially in most instances. Despite this adverse price situation, gold was the only major metal to be produced in larger quantity in 1946 than in 1945.

This report, which summarizes mine output for 1946, is part of the regular monthly gold-mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1947. The following table and State reviews for 1946 were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable gold content of ores and concentrates.

Prepared by Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Alaska. - Alaska stood third in gold production in 1946, accounting for 13 percent of the total for the United States. The number of placer operators gradually increased after the rescinding, effective July 1, 1945, of WPB Order L-208, but the resumption of lode mining lagged. Nevertheless, gold production in 1946 was nearly three times the total for 1945. Among the more important producers from placer operations were the United States Smelting, Refining and Mining Co., Fairbanks district; the Artic Circle Exploration, Inc., on Candle Creek in the Fairhaven district; the New York Alaska Gold Dredging Co., on Upper Tuluksak River, Tuluksak-Aniak district; the Alluvial Golds, Inc., on Woodchopper Creek, and Gold Placers, Inc., on Coal Creek, Circle district; Brinker-Johnson Co., on Caribou Creek, Fairbanks district; C. J. Berry Dredging Co., on Lower Mammoth Creek, Circle district; the Wade Creek Dredging Co., on Wade Creek, Fortymile district; Caribou Mines, on Caribou Creek, Kantishna district; and Bristol Bay Mining Co., on No. 2 above Watamuse Creek, Goodnews Bay district. The chief lode gold producers were the Cleary Hill Mines, Inc., Fairbanks district, and the Gold Cord Mining Co., Willow Creek district.

Arizona. - Gold production in Arizona is largely byproduct to the output of other metals. About 76 percent of the quantity produced in 1946 was recovered from copper ore mined at Bisbee, Ajo, Jerome, Superior, Morenci and Miami. The remainder came largely from zinc-lead ore from a mine in the Big Bug district. The total output of gold in 1946 was slightly larger than in 1945, and the gain would have been greater except for the labor strike lasting more than 3 months at several large copper mines.

California. - California led all other States in the production of gold in 1946 with 23 percent of the total for the United States, having passed Utah which produces gold chiefly as a byproduct of copper mining; Utah was dominant during the entire period the gold mine closure order, WPB Order L-208, was in effect, October 8, 1942, to June 30, 1945. Production in California rose 135 percent in 1946 and was the largest since 1942, amounting to only 41 percent of the total for that year, however. Based on incomplete classification data, placer mines appear to have contributed 75 percent of the 1946 output and lode mines 25 percent, compared with 63 and 37 percent, respectively in 1945.

The Yuba Consolidated Gold Fields operated five dredges (Nos. 14, 15, 17, and 20 all year and No. 18 part time) in the Yuba River district, Yuba County during 1946, two in Butte County, (not concurrently) and one in Siskiyou which discontinued operations in April. The Natomas Co. operated its entire fleet of seven dredges in the Folsom district, Sacramento County during 1946. The Gold Hill Dredging Co. operated two dredges on the Mokelumne River, Camanche district, San Joaquin County, and one dredge on the Feather River, Oroville district, Butte County. Connected-bucket dredges were operated also by the Merced Dredging Co., and the Snelling Gold Dredging Co., Snelling district, Merced County; Capital Dredging Co. and the Lancha Plana Gold Dredging Co., Folsom district, Sacramento County; French Gulch Dredging Co., French Gulch district, and Thurman Gold Dredging Co., Igo district, Shasta County; Yreka Gold Dredging Co., Klamath River district, Siskiyou County; the La Grange Gold Dredging Co., and the Tuolumne Gold Dredging Co., La Grange district, Stanislaus County; and the Junction City

Mining Co., Junction City district, Trinity County. Numerous placer gold-mining companies using dragline equipment began operating in 1946. Most of the companies had operated prior to the gold-mine closing Order L-208, but had not resumed mining soon after the lifting of the Order in 1945 owing to the difficulty of obtaining equipment. Several hydraulic operations were active during 1946, and gold was produced by the Morris Ravine Mining Co. at its drift mine in the Oroville district, Butte County. Several gravel companies continued to report the recovery of gold as a byproduct of their operations, and small-lot shipments of placer gold increased in 1946.

Gold production at lode mines increased in 1946 largely owing to expanded output at a few of the larger properties. The total would have been considerably greater but for the suspension of operations at the Empire Star Mines Co., Ltd., properties in the Grass Valley-Nevada City district, Nevada County on July 1. Inability to operate profitably under existing conditions of high cost of labor and supplies was the principal reason for the shutdown, and also was why many other former producers had not reopened since the war. In 1945, lode gold derived from gold ores accounted for 86 percent of the total lode gold produced, and 14 percent was recovered from ore mined primarily for copper, lead, zinc, and other base metals. Preliminary figures indicate that in 1946 the ratio was about the same. Approximately two-thirds of the gold from gold ore produced in California in 1946 was mined in the Grass Valley-Nevada City district, Nevada County, almost entirely by the Idaho Maryland Mines Corporation and the Empire Star Mines Co., Ltd. In the Washington district of Nevada County the Ancho-Erie Mining Co. was a substantial producer during 1946. In the Mother Lode Counties, the larger shipments of gold derived from gold ore were made by the Mount Gaines Mining Co., Hunter Valley district, Mariposa County, and the Eagle Shawmut Mine, Mother Lode district, Tuolumne County. Burton Bros., Inc., cyanided gold ore from the Tropico mine, Mojave district, Kern County, and recovered over 1,000 ounces of gold. The Original Sixteen to One Mine, Inc., operated the Original Sixteen to One Mine, Alleghany district, Sierra County, throughout the year. Also in Sierra County, but in the Downieville district, the Brush Creek mine operated by Alfred L. Merritt showed a substantial production.

Colorado. - Gold output in Colorado advanced 36 percent in 1946, but in registering even this large gain lagged considerably behind the performance of the United States as a whole. Colorado produces lode gold chiefly from dry and siliceous gold and silver ores. The increase in gold output in Colorado is attributable chiefly to renewed dredging operations in Park County and increased underground activities in the Cripple Creek district, Teller County. The Cripple Creek district as usual was the major source of gold in Colorado in 1946.

Idaho. - Output of gold in Idaho gained 134 percent in 1946, reversing the downtrend in progress since 1941. The rise in 1946 resulted mainly from the resumption of dredging operations in Boise, Custer, Elmore, Idaho, and Lemhi Counties. About half of the gold produced in Idaho in 1946 was recovered from gold-tungsten-antimony ore from the Yellow Pine mine at Stibnite, gold ore from the Boise-Rochester-Monarch (Talache Mines, Inc.) property at Atlanta, zinc-lead ore from the Triumph property near Hailey, and zinc-lead ore from various mines in the Coeur d'Alene region. Most of the remainder was recovered from either bucket-line or dragline dredging in the Boise Basin, Middle Boise, Yankee Fork, Gibbonsville, Elk City, and Orogrande districts. The output of gold from lode mines was about 21,500 ounces in 1946 compared with 16,011 in 1945 and from placers 20,050 compared with 1,769.

Montana. - An increase of 220 percent in yield of placer gold in 1946, accompanied by a gain of 8 percent in lode gold resulted in an overall rise of 54 percent and the largest output since 1942. The record for gold was in strong contrast with those for silver, copper, lead and zinc, which had declines ranging from 9 to 47 percent. Base-metal mines in 1946 no longer supplied the greater part of Montana's gold production, as outputs from straight gold ores and from placers recovered a considerable part of their former importance. In 1946 lodes supplied 37,600 and placers 31,000 ounces of gold, compared with 34,907 and 9,690 ounces, respectively, in 1945. Siliceous ores yielded more than twice as much gold in 1946 as did base-metal ores. The leading gold producers in 1946, in order of output were: Winston Bros., Jefferson County; Jardine Mining Co., Park County; Porter Bros., Lewis and Clark County; Anaconda Copper Mining Co. at Butte and Anaconda; H. and H. Mines, Granite County; Montana Rainbow Mining Co., Lewis and Clark County; Canusco, Inc., Missoula County; Emigrant Dredging Co., Park County; Ruby Gulch Mining Co., Phillips County; and Douglas Placers, Broadwater County. These 10 producers supplied 68 percent of the State total gold in 1946.

Nevada. - Nevada's output of gold dropped 4 percent in 1946, in contrast with all other States that were as important producers, except Utah, and registered the smallest total quantity since 1895. Preliminary data show that 85 percent of Nevada's gold was produced at lode mines and 15 percent at placers, compared with 90 and 10 percent, respectively, in 1945. The Kennecott Copper Corporation (Nevada Mines Division), a copper mine operator in the Robinson district, White Pine County, was Nevada's leading gold producer in 1945, and second place was held again by the Consolidated Coppermines Corporation, also a copper producer in the same district. These two companies and the Copper Canyon Mining Co., Battle Mountain district, Lander County, also a copper producer, supplied nearly half of Nevada's total gold in 1946. The Manhattan Gold Dredging Co., Manhattan district, Nye County, had an increased output and attained third place as a gold producer by a considerable margin over the Consolidated Chollar Gould & Savage Mining Co., Comstock district, Storey County, which ranked fourth.

Oregon. - Although Oregon's production of gold is relatively small, it is noteworthy that the 1946 output was four times that in 1945, but was only 16 percent of the all-time record of 113,402 ounces in 1940.

South Dakota. - South Dakota **ranked** only behind California in output of gold in 1946, in returning to its pre-L-208 position in gold production in the United

States; South Dakota usually ranked third prior to the gold closure order. Output in 1946 was 457 percent above 1945 and accounted for 21 percent of the United States total, compared with 23 percent for California. Only two mines producing gold and silver were in continuous operation, the Homestake Mining Co. and Bald Mountain Mining Co. properties in Lawrence County. Owing chiefly to a shortage of skilled labor, the former reached only slightly over 50 percent of its pre-war production and the latter about as well. The Belle Eldridge Gold Mines, Inc., at Deadwood made a small shipment of gold bullion during the latter part of the year.

Utah. - Utah's output of gold declined 43 percent in 1946 and only one other important gold-producing State mong the first seven, Nevada with a drop of 4 percent, produced less in 1946 than in 1945. After several years as the leading gold-producing State, Utah yielded to California, South Dakota and Alaska in 1946. The sharp decline is attributed largely to labor strikes that seriously affected operations at the principal copper and zinc-lead mines. Copper ore continued to be the chief source of gold, supplying 80 percent of the State output; zinc-lead followed with 15 percent and siliceous ores furnished most of the remainder. Gold output from the Utah Copper Co., West Mountain (Bingham) district, Salt Lake County, in 1946 was almost 45 percent less than in 1945 and from the United States & Lark group at Bingham, 69 percent less. The decline for the latter mine caused it to drop to third place among State gold producers and the New Park property, Park City Region, moved to second place, following a 23-percent gain over 1945. Next in order were the Tintic Bullion mine, Tintic district; Calumet mine, Rush Valley district; National Tunnel & Mines Co. and the Butterfield group, West Mountain district. These seven properties produced 96 percent of the State total gold in 1946.

Washington. - Gold output in Washington fell 6 percent in 1946 largely because of a reduced tonnage of zinc-copper ore from the Holden property of the Howe Sound Co. in Chelan County; the property, however, remained the State leading gold producer. The only other important gold producer during the year was the Knob Hill mine in Ferry County, where output fell short of its 1945 total by a few hundred ounces. These two properties contributed 96 percent of the State total.

Mine production of recoverable gold in the United States,
in 1946, by months 1/, in fine ounces

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total
Eastern States....................	154	63	173	105	120	136	110	132	133	139	144	145	1,554
Central States....................	-	-	-	-	-	-	-	-	-	-	-	-	-
Western States:													
Arizona........................	5,765	6,300	6,465	5,850	5,500	5,750	6,080	6,090	7,300	8,200	7,500	7,500	78,300
California.....................	20,100	23,000	29,000	27,500	29,000	28,500	29,000	33,500	33,000	32,000	31,500	32,000	348,100
Colorado.......................	9,420	9,289	11,814	10,285	12,094	11,415	11,158	12,373	12,078	13,284	12,200	11,800	137,210
Idaho..........................	1,100	720	1,880	2,000	5,400	5,580	5,750	5,570	3,600	2,750	3,700	3,500	41,550
Montana........................	3,855	3,200	3,925	4,335	6,960	5,800	7,125	7,250	6,800	7,050	6,300	6,000	68,600
Nevada.........................	6,800	7,400	7,200	8,500	6,800	7,400	5,500	7,500	7,000	6,800	9,600	8,000	88,500
New Mexico.....................	370	370	273	413	487	290	220	343	352	300	290	260	3,968
Oregon.........................	680	509	1,720	1,120	2,000	2,500	1,800	2,100	1,700	1,500	1,600	1,300	18,529
South Dakota...................	22,584	20,041	25,574	24,187	30,160	28,690	28,328	26,266	25,918	26,302	26,550	27,000	311,600
Texas..........................	-	-	-	-	-	-	1	3	-	2	2	2	10
Utah...........................	15,635	1,530	1,700	2,100	2,825	2,750	16,135	20,125	23,500	23,800	23,600	24,800	158,500
Washington.....................	5,235	5,415	5,400	5,035	4,330	4,665	4,200	3,810	4,060	4,150	4,100	4,100	54,500
Wyoming........................	-	-	-	-	-	-	3	5	83	9	5	-	105
	91,544	77,774	94,951	91,325	105,556	103,340	115,300	124,935	125,391	126,147	126,947	126,262	1,309,472
Alaska 2/........................	1,460	6,590	196	214	7,161	7,796	22,184	38,949	51,527	27,257	17,693	11,500	192,527
Total United States.............	93,158	84,427	95,320	91,644	112,837	111,272	137,594	164,016	177,051	153,543	144,784	137,907	1,503,553

1/ Revised figures.
2/ Alaska montnly totals based on mint and smelter receipts.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary
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For Release January 21, 1947

MINERAL MARKET REPORTS
MMS NO. 1489

UNIVERSITY OF ILLINOIS

VALUE OF MINERAL PRODUCTION IN ALASKA INCREASES 9 PERCENT IN 1946 ACCORDING TO PRELIMINARY ESTIMATES

A near three fold increase in the output of gold in Alaska in 1946 compared with 1945 and a decline of 85 percent in the value of non-metallic minerals produced were the outstanding features of the Alaska mineral production record for 1946 according to the Economics and Statistics Branch of the Bureau of Mines, United States Department of the Interior. Total valuation of mineral production in Alaska in 1946 was $11,108,000, an increase of 9 percent compared with the valuation of $10,210,000 for 1945. Gold production of the Territory rose from 68,117 ounces valued at $2,384,095 in 1945 to 192,527 ounces valued at $6,738,445 in 1946. Silver output nearly tripled, and bituminous coal production expanded by 23 percent. No production of copper, lead, or zinc was reported.

The gain in total valuation in 1946 was attributable largely to a steady expansion in placer gold operations since the rescinding of WPB Limitation Order L-208 effective July 1, 1945, and to the substantial increase in production of bituminous coal which was encouraged by a shipping strike on the West Coast that curtailed imports of the fuel into the Territory.

Of the three major groups of mineral products—metals, fuels, and other nonmetals—only the other nonmetals showed an over-all decline in value of output in 1946; value for this group decreased markedly, the decline amounting to 85 percent. Value of the metals increased 117 percent, and that for the fuels advanced 22 percent.

Details on mineral production in 1946 follow:

METALS

Total value of metals in 1946 was $8,100,000 compared with $3,732,000 in 1945—an increase of 117 percent.

Gold and Silver.—Alaska lode and placer mines in 1946 yielded 192,527 fine ounces of gold, valued at $6,738,445 compared with 68,117 ounces valued at $2,384,095 in 1945, a gain of 183 percent. Silver output in 1946 was 29,058 fine ounces, valued at $23,479 compared with 9,983 ounces valued at $7,099 in 1945. The total value for the two metals (in terms of recoverable metals) was $6,761,924—a gain of 182 percent over the $2,394,436 total for gold, silver, copper, and lead produced in 1945.

Prepared by Alfred L. Ransome and other members of the staff, Economics and Statistics Branch, under the supervision of E. W. Pehrson, Chief.

Among the more important producers of gold from placer operations were: The United States Smelting Refining and Mining Co., which operated four connected-bucket dredges (three began work early in April and one early in May) in the Fairbanks district; the Artic Circle Exploration, Inc., operating two connected-bucket dredges and a dragline excavator on Candle Creek in the Fairhaven district; the New York Alaska Gold Dredging Co., operating a dredge on Upper Tuluksak River in the Tuluksak-Aniak district; the Alluvial Golds, Inc., operating a connected-bucket dredge on Woodchopper Creek, and Gold Placers, Inc., operating a dredge on Coal Creek, in the Circle district; Brinker-Johnson Co., operating a connected-bucket dredge on Caribou Creek, Fairbanks district; C. J. Berry Dredging Co. operating a dredge on Lower Mammoth Creek, Circle district; the Wade Creek Dredging Co. operating on Wade Creek, Fortymile district; Caribou Mines operating dragline equipment on Caribou Creek in the Kantishna district; and Bristol Bay Mining Co. operating a dragline along Watamuse Creek, Goodnews Bay district.

In contrast to the increased placer mining activity, lode mining remained practically at a standstill during 1946. The near impossibility of purchasing new equipment, scarcity of labor, and the high cost of supplies and labor severely dampened any incentive to begin operations. The more important producers of gold in 1946 from lode operations were: The Cleary Hill Mines, Inc., operating the Cleary Hill mine and amalgamation-flotation mill in the Fairbanks district; and the Gold Cord Mining Co. operating in the Willow Creek district. The Alaska Juneau mine remained inactive during the year with the exception of minumum maintenence work. Several cleanups of the mill were made; the recovered material was shipped to the Seattle Assay Office.

Copper, Lead, and Zinc.—No production of the base metals, copper, lead, and zinc, was reported, and indications at the close of the year were that any output of these metals in 1946 that might be shown on final reports by producers would be negligible.

Mine production (based on mint and smelter receipts) of gold, silver, copper, and lead in Alaska, 1946, by months in terms of recoverable metals

	Gold (Fine ounces)	Silver (Fine ounces)	Copper (Short tons)	Lead (Short tons)
January	1,460	200	-	-
February	6,590	990	-	-
March	196	40	-	-
April	214	44	-	-
May	7,161	1,173	-	-
June	7,796	1,295	-	-
July	22,184	3,289	-	-
August	38,949	5,829	-	-
September	51,527	8,248	-	-
October	27,257	3,645	-	-
November	17,693	2,605	-	-
December	11,500	1,700	-	-
	192,527	29,058	-	-
Total, 1945	68,117	9,983	5	11

Mercury.--A significant quantity of mercury was produced at the Red Devil (New Idria-Alaska) and Decoursey Mountain mines in southeastern Alaska, but the output fell below 1945 production.

Platinum metals.--The output of platinum metals, which were mined with a dragline dredge and a connected bucket dredge from placer deposits in the Goodnews Bay district in southeastern Alaska by the Goodnews Bay Mining Co., declined about 13 percent compared with production in 1945.

Tungsten.—The J. H. Scott Co. milled a small quantity of tungsten ore at its Riverside mine near Hyder.

Other metals.--No production of antimony, chromite, iron ore, manganese, molybdenum, tin, or vanadium was reported in 1946.

FUELS

Total value of fuels in 1946 was $2,324,000 compared with $1,905,000 in 1945—an increase of 22 percent.

Coal.—Production of fuels consisted entirely of bituminous coal, the output of which totaled 370,000 short tons compared with 300,000 tons in 1945—a gain of 23 percent. This substantial increase in production resulted in part from a decrease in coal imports caused by a shipping strike at West Coast ports.

OTHER NONMETALS

Total value of the other nonmetals in 1946 was $684,000 compared with $4,573,000 in 1945—a decline of 85 percent which followed the completion of military facilities.

Sand, Gravel, and Crushed Stone.—During the war years large quantities of sand, gravel, and crushed stone were required for the construction of military facilities in Alaska. In 1946, however, following completion of those facilities, requirements for these nonmetals were limited to normal demands for highway and building construction. Total requirements in 1946 were less than 100,000 tons.

Asbestos.—Shipments of tremolite asbestos in 1946 did not exceed 10 tons. This asbestos, which is of good quality, occurs in the Kobuk River area. It is shipped out by air transport and sold chiefly for use as a chemical filter.

Jade.—Small shipments of jade were made by airplane to Fairbanks. The material, some of which is of gem quality, occurs north of the Kobuk River and in the Kobuk River basin.

Mineral production in Alaska, 1944-46

Product	1944		1945		1946 (estimate)	
	Quantity	Value	Quantity	Value	Quantity	Value
Antimony ore (concentrates)------short tons	73	$6,465	--------	--------	--------	--------
Arsenic------do--	(1)	(1)	(1)	(1)	(1)	(1)
Asbesto------do--	(2)	(2)	--------	--------	(2)	(2)
Chromite------do--	1,845	64,456	--------	--------	--------	--------
Coal------do--	348,375	2,239,684	300,000	$1,905,000	370,000	$2,324,000
Copper------pounds	4,000	540	10,000	1,350	--------	--------
Gems and precious stones------	--------	--------	--------	(3)	--------	(3)
Gold------troy ounces	49,296	1,725,360	68,117	2,384,095	192,527	6,738,445
Lead------short tons	44	7,040	11	1,892	--------	--------
Mercury------flasks (76 pounds)-	(2)	(2)	(2)	(2)	(2)	(2)
Ores (crude), etc.:						
Copper------short tons	--------	--------	6	(4)	(1)	(4)
Dry and siliceous (gold and silver)------do--	381,574	(4)	6,506	(4)	(1)	(4)
Platinum metals(crude)------troy ounces	33,616	(2)	26,505	(2)	(2)	(2)
Sand and gravel------short tons	712,496	499,269	(2)	(2)	(2)	(2)
Silver------troy ounces	13,362	9,502	9,983	7,099	29,058	23,479
Stone------short tons	(2)	(2)	(2)	(2)	(2)	(2)
Tin (metallic equivalent)------do--	--------	--------	--------	--------	--------	--------
Tungsten ore (60-percent conc.)------do--	19	(2)	--------	--------	(1)	(1)
Miscellaneous 5/------	--------	2,350,309	--------	5,910,704	--------	2,022,250
Total value, eliminating duplications	--------	6,903,000	--------	10,210,000	--------	11,108,000

1/ Figures not available.
2/ Value included under "Miscellaneous."
3/ No canvass.
4/ Not valued as ore; value of recoverable metal content included under the metals.
5/ Includes minerals indicated by "2/" above.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

For release January 21, 1947.

MINERAL MARKET REPORT
MMS No. 1490.

JAN 31 1947

MINE PRODUCTION OF SILVER IN THE UNITED STATES IN 1946
PRELIMINARY ANNUAL FIGURES

The decline in mine production of silver, uninterrupted since 1940, carried output in 1946 to 21,778,236 fine ounces, the lowest since 1871, according to the Bureau of Mines, United States Department of the Interior. Production in 1946 was 25 percent less than the 29,024,197 ounces produced in 1945. In 1946 output was valued at $17,596,815 compared with $20,639,429 in 1945, a decline of 15 percent. Idaho which accounted for 27 percent of the United States total continued to lead all other States in production, a position it has maintained since 1933. Following Idaho in order of output in 1946 were Utah, Arizona, and Montana; these three States together with Idaho accounted for 75 percent of the United States total. An inspection of monthly production figures reveals a serious decline during the early months of 1946 from which there was no substantial recovery until July. The labor strikes at copper, lead, and zinc mines and smelters were the principal cause of the depressed output. In August monthly output reached its high point for the year but the following months were marked by productions very near the level attained in August.

As has been the situation for many years, most of the silver was recovered as a byproduct of ores mined principally for some other metal. Thus the drop in the productions of copper, lead, and zinc affected silver output adversely and was the principal cause in the decline. On the other hand, the increase in gold production from which substantial quantities of silver are derived as a byproduct, ordinarily would give promise of more silver. Much of the increase in gold output in 1946 compared with 1945, however, was at placers where silver recovery is a nearly negligible factor.

From July 1, 1939, until June 30, 1946, the Treasury purchase price of silver domestically mined after July 1, 1939, had been fixed at $0.7111+ per fine ounce. When war conditions caused the world price to approach this level any rise above it was prevented domestically by an OPA ceiling of $0.7111+. When the Green Act, which had permitted sales of Treasury silver at $0.7111+, expired December 31, 1945, domestic consumers found the silver supply sharply limited because foreign producers found the ceiling price unattractive and domestic producers could not supply the demand from current output. The situation was relieved in July 1946 by Congressional action raising the Treasury purchase price to $0.905 per fine ounce and providing for sales of Treasury stocks at the same price and OPA action raising the ceiling price to the same level. The Act was effective July 1, 1946. Immediately after passage of the Act foreign silver

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Prepared by Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

became available at a price just below the Treasury selling price; Treasury sales have been negligible. In addition to supplies from foreign sources, there was much domestic silver mined before July 1 in process of recovery. As the Treasury purchase price on this silver was \$0.7111+ an ounce, the metal was offered in the commercial market. Within a few months most such silver had been absorbed and domestic consumers were relying on foreign silver because its price toward the end of the year averaged several cents an ounce below the Treasury buying and selling price. Presumably, virtually all domestic silver mined after July 1 flowed to the Treasury. The silver values presented in the report are calculated at an average price for the year of \$0.808 per fine ounce. The higher price of silver in the latter months of 1946 does not appear to have stimulated its production appreciably although the monthly average output for the last 5 months of the year was 34 percent above that for the first 5 months. The rise, however, appears to have been related to the settlement of the very serious labor strikes at copper, lead and zinc mines and smelters, most of which occurred before midyear.

This report, which summarizes mine output for 1946, is part of the regular monthly silver mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1947. The following table and State reviews for 1946 were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable silver content of ores and concentrates.

Alaska. - Silver output in Alaska, almost entirely as a byproduct of placer gold operations, increased three-fold in 1946; it amounted, however, to only 6 percent of the total for the recent peak year, 1937.

Arizona. - Silver is produced in Arizona largely as a byproduct in the recovery of other metals but such production was sufficiently large to cause the State to rank third after Idaho and Utah in silver output in 1946. The drop of 4 percent noted in 1946 as compared with 1945 was largely because of a decline in output of copper ore from the Copper Queen, United Verde and Morenci mines. About 70 percent of the State's output came from the Copper Queen, United Verde, New Cornelia and Morenci mines of the Phelps Dodge Corp. and the Iron King and Magma mines. Slightly over half of the silver produced in 1946 was recovered from copper ore mined at Bisbee, Ajo, Jerome, Superior, Morenci, and Miami. Most of the remainder came from zinc-lead ore from the Big Bug, Harshaw, Pima, Warren (Bisbee), and Old Hat districts, and silver ore from the Ash Peak district.

California. - California ranked sixth in silver production in 1946, with an increase of 39 percent over the 1945 output. Three quarters of the 1946 production was derived from argentiferous lead and lead-zinc ores, the principal producers of which were the Anaconda Copper Mining Co., operating the Darwin mines, Coso district, Inyo County; and the Finley Co., Columbia No. 2 mine, Resting Springs district, also in Inyo County. Other large silver producers were: The Mountain Copper Co., Ltd., Hornet mine, Flat Creek district, Shasta County; the Shawmut Copper Mine Co., Penn mine, Campo Seco district, Calaveras County; and Frank W. Royer, Kelly mine, Randsburg district, San Bernardino County.

Colorado. - Production of silver in Colorado, the fifth ranking State in 1946, declined 3 percent, coinciding with the downtrend in most other important silver producing areas; except for 1932 it was Colorado's smallest output since 1873. Chief silver-producing counties were: Lake, Mineral, San Miguel, San Juan, Ouray, Dolores and Summit, each of which contributed over 100,000 ounces. In 1945 Mineral County ranked first, followed by Lake, San Juan, San Miguel, Ouray, Dolores and Clear Creek, all with outputs exceeding 100,000 ounces.

Central States. - Silver production in the Central States fell 42 percent in 1946. Most of the silver output was recovered in desilverizing some of the lead bullion made in smelting lead concentrates from the Southeastern Missouri region. Ordinarily silver is recovered as a byproduct from some of the Michigan copper ore and bullion, but none was reported from this source in 1946.

Eastern States. - Output of silver in the Eastern States dropped 4 percent, a continuation of the decline in progress after 1943. Production in 1946 comprised 54,787 ounces from copper and copper-iron-zinc ore from Vermont and Tennessee, 15,420 ounces from zinc-lead ore from New York, and 8,564 ounces from magnetite-pyrite-chalcopyrite ore from Pennsylvania.

Idaho. - As has been the case since 1933, Idaho led all other areas in the production of silver in 1946, accounting in that year for 27 percent of the total for the United States, compared with 28 percent in 1945. The output declined 26 percent in 1946 resulting principally from a shortage of miners. Substantial decreases in output of silver were recorded from the Sunshine, Osburn tailing dump, Sherman, Morning, and Triumph properties. About 54 percent of the State output in 1946 was recovered from zinc-lead ore and old tailings, and the remainder largely from lead ore and silver ore. The Sunshine mine remained the largest producer of silver in the State; it was followed by the Bunker Hill & Sullivan, Polaris, Osburn tailing dump, Silver Dollar, Triumph, Page, Morning, Star, Sweeny tailing dump, and Sherman mines; all except the Triumph property are in the Coeur d'Alene region.

Montana. - The slump of 47 percent in production of silver in Montana in 1946, to the lowest quantity since 1933, was caused chiefly by the persistent manpower shortage. Montana ranked fourth in production in the United States compared with third in 1945. Most of the loss resulted from a decrease of over 50 percent in the yield of silver from the copper-producing operations of the Anaconda Copper Mining Co. at Butte and Anaconda. However, company copper ore supplied over 64 percent of the State total silver in 1946. Other important sources of silver included the Emma mine at Butte, the Mike Horse mine near Flesher, the Travona mine at Butte, the operations of the Montana Leasing Co. near Neihart, the North Butte mine at Butte, and the Toledo-Buckeye group near Sheridan. These seven producers contributed about 77 percent of the State total silver in 1946.

Nevada. - Nevada stood seventh among silver-producing States in 1946. Output rose 2 percent, contrasted with the trend in five of the other six leading areas; the total for 1945, however, was the smallest recorded since 1899. Between 85 and 90 percent of Nevada's silver in 1946 was recovered from base metal ores. Somewhat less than half was derived from zinc-lead ore (compared with one-third in 1945), and smaller quantities came from copper, lead, zinc, zinc-copper, and gold-silver ores. The leading producers of silver from zinc-lead ore were the Combined Metals Reduction Co., Pioche district, Lincoln County, Bristol Silver Mines Co., Bristol mine, Jack Rabbit district, Lincoln County, Prince Consolidated Mining Co., and the Ely Valley Mine, both in the Pioche district, Lincoln County, and the B. B. S. Mining Corporation, Simon Silver-Lead mine, Bell district, Mineral County. The leading producers of silver from lead ore were McFarland & Hullinger, Cleveland mine, Delano district, Elko County, and the Salt Lake-Pioche Mining Co. (including lessees), Financier and Apex mines, Pioche district, Lincoln County. Copper concentrates shipped to smelters from the Kennecott Copper Corporation (Nevada Mines Division) and the Consolidated Coppermines Corporation mines in the Robinson district, White Pine County, and the Copper Canyon Mining Co.'s Copper Canyon operation, Battle Mountain district, Lander County, were an important source of silver in 1946. Gold-silver ore mined principally by the Tonopah Mining Co., Tonopah district, Nye County, and the Consolidated Chollar Gould & Savage Mining Co., Overman mine, Comstock district, Storey County, was also an important source of silver.

New Mexico. - Output of silver in New Mexico fell 29 percent in 1946 owing largely to cessation of operations in June at the Carlisle group of mines operated by the Exploration Syndicate, Inc., and the loss of about 3 months' production because of a labor strike at the Hanover unit of the American Smelting & Refining Co.

South Dakota. - Silver production in South Dakota increased 229 percent in 1946, but it amounted to only 47 percent of the 1942 output.

Utah. - Despite a fall of 39 percent in output of silver in 1946, compared with the decrease of 25 percent for the United States as a whole, Utah maintained second place among silver-producing areas. The poor showing in 1946 was owing chiefly to the 5-months' strikes at Bingham Canyon properties in the first half of the year. Losses in production were particularly pronounced at the properties of the Utah Copper Co. and the United States Smelting, Refining & Mining Co. in the West Mountain (Bingham) district and at the Tintic Standard Mining Co. properties in the Tintic district. Silver output in the Park City region held up well largely because of the increase of 100,000 ounces from the property of the New Park Mining Co., although this gain was offset by a slight decline at the Park Utah Consolidated Mines Co. and a pronounced decrease at Silver King Coalition Mines Co. The Utah Copper Co. and the United States & Lark property remained in first and second place, respectively, among State silver producers, although output at the two properties was only half of that in 1945. Other important silver producers in 1946 in order of output were the New Park Mining Co., Park Utah Consolidated Mines Co., Chief Consolidated Mining Co., Calumet, Silver King Coalition Mines Co., Tintic Standard Mining Co., Butterfield, and National Tunnel & Mines Co. properties. These 10 properties supplied nearly 90 percent of the State total silver in 1946.

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Washington. - Production of silver in Washington fell 8 percent in 1946 and was the smallest since 1937. The two leading producers in 1946 were the Holden property of the Howe Sound Co., Chelan County, and the Knob Hill mine, Ferry County. The Kaaba mine, Okanogan County, stood third having nearly doubled its output. These three properties accounted for 93 percent of the State total silver.

Mine production of recoverable silver in the United States in 1946, by months 1/, in fine ounces

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total
Eastern States..	7,821	7,418	8,436	8,081	10,629	8,326	5,190	4,379	4,922	4,791	4,380	4,398	78,771
Central States..	7,228	6,544	6,686	6,393	5,234	4,847	5,288	6,539	5,410	5,753	4,420	4,423	68,765
Western States:													
Arizona........	320,000	307,000	256,300	186,900	169,900	186,500	282,800	323,750	328,350	356,000	338,500	344,000	3,400,000
California.....	130,000	76,000	92,000	91,500	79,000	80,000	84,000	83,000	135,000	160,000	178,000	180,000	1,368,500
Colorado.......	160,273	187,177	184,589	153,722	171,774	164,033	179,903	312,116	227,958	156,936	135,019	134,000	2,167,500
Idaho..........	420,000	500,000	525,000	455,000	450,000	440,000	505,000	537,000	500,000	500,000	600,000	553,000	5,985,000
Montana........	345,000	280,800	266,200	100,000	215,000	260,000	280,000	300,000	276,000	290,000	275,000	282,000	3,170,000
Nevada.........	87,000	84,700	79,800	77,000	82,500	83,600	96,500	100,100	98,000	85,000	95,000	95,000	1,064,200
New Mexico.....	26,000	27,900	22,100	24,350	20,700	26,190	28,180	24,250	29,230	33,600	33,000	32,500	328,000
Oregon.........	135	85	290	150	1,380	500	400	550	1,500	350	325	225	5,890
South Dakota...	8,800	7,396	8,257	7,810	6,613	6,844	7,408	5,800	5,728	7,222	7,770	7,800	87,448
Texas..........	18	–	–	–	–	–	9,056	7,281	12,295	5,328	5,600	5,500	45,078
Utah...........	373,000	143,000	165,000	160,000	162,000	143,500	366,000	418,500	440,000	450,000	439,000	460,000	3,720,000
Washington.....	19,775	15,700	24,075	23,700	20,200	22,250	23,600	20,700	22,000	23,000	22,500	22,500	260,000
Wyoming........	–	–	–	–	–	–	–	1	22	2	1	–	26
	1,890,001	1,629,758	1,623,611	1,280,132	1,379,067	1,413,417	1,862,847	2,133,048	2,076,083	2,067,438	2,129,715	2,116,525	21,601,642
Alaska 2/.......	200	990	40	44	1,173	1,295	3,289	5,829	8,248	3,645	2,605	1,700	29,058
Total United States........	1,905,250	1,644,710	1,638,773	1,294,650	1,396,103	1,427,885	1,876,614	2,149,795	2,094,663	2,081,627	2,141,120	2,127,048	21,778,236

1/ Revised figures.
2/ Alaska monthly totals based on mint and smelter receipts.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

For release January 22, 1947.

MINERAL MARKET REPORT
M. M. S. No. 1491

MINE PRODUCTION OF LEAD IN THE UNITED STATES IN 1946 - PRELIMINARY ANNUAL FIGURES

Despite unprecedented consumer demands which skyrocketed the lead price to a record-breaking 12.55 cents per pound at the year's end, lead mining in the United States slumped to the lowest level since 1935, according to the Bureau of Mines, United States Department of the Interior. In 1946 the total mine production of lead in the United States (including that made into pigments) was 332,478 short tons, a decrease of 15 percent from 1945. At the average weighted yearly price of $0.101 per pound, which includes allowance for premiums paid for overquota production, the 1946 output was valued at $67,160,556. This compares with a value of $67,222,932 in 1945, which was calculated at the average weighted price for that year of $0.086.

Prolonged strikes at mines and smelters, especially in the Western United States, and a continued shortage of labor were the principal factors which shattered the industry's hopes for an increased mine output in 1946. Work stoppages in 1946 began in Utah when on January 21 approximately 1,300 workers at the American Smelting & Refining Co. Murray lead smelter and the United States Smelting, Refining & Mining Co. West Mountain (Bingham) district mine and Midvale mill went out on strike following breakdown in negotiations for an increased wage scale consonant with the changing economic conditions. The strike became nation-wide on February 25 as workers in virtually every lead mining, milling, and smelting operation of the American Smelting & Refining Co. joined in the dispute for higher wages. Lead-zinc mining and milling operations of the Phelps Dodge Corporation at Bisbee, Arizona were closed by strike on March 20 along with certain of the Corporation's Arizona, Texas, and New York copper mining and metallurgical operations. Although the smelter strikes did not materially affect the output of the nation's large lead mines, many small operations with limited storage facilities and dependent upon prompt payment of smelter returns for operating expenses were forced to close. Work stoppages continued to hamper the domestic lead industry until the end of June when new labor contracts were negotiated and signed by operators and officials of the labor union. A strike at mines and mills of the St. Joseph Lead Co. in Southeastern Missouri closed operations at this important lead-producing area October 22 to November 1.

The shortage of mine and mill labor continued to be a potent factor limiting domestic mine output during 1946. The predicted return to the mines of former employees who migrated to the cities for high-paying wartime jobs fell far short of expectations. Likewise, a large percentage of the labor supply which entered the armed services during the war failed to return upon demobilization.

Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Announcement by the Office of Price Administration on May 29 of a higher ceiling price for lead, effective June 3, increased the long-established 6.50 cents per pound base price of lead, New York, to 8.25 cents. This new price level, although welcomed by the lead industry, was considered by industry spokesmen to be somewhat below that necessary to effect a prompt relief of the prevailing lead shortage. A bill to extend the OPA was vetoed by the President on June 29 and on July 2 the price of lead advanced to 9.50 cents per pound, New York. With the reestablishment of OPA by legislative action on July 25, the former ceiling price of 8.25 cents became effective and prevailed until November 9 when the President announced his decontrol order which included the removal of ceiling prices from all metals. The lead market, freed of price limitations, and stimulated by brisk consumer bidding for a share of the inadequate supply, responded swiftly to decontrol, and on November 11 lead was quoted at 10.50 cents, New York. Following removal of lead import restrictions by the Civilian Production Administration on November 18, the price advanced to 11.80 cents, New York, which raised the market price to the prevailing import basis, plus freight and duty charge. On December 16 domestic producers raised the price to 12.55 cents, New York, the highest level on record. The previous record high, which prevailed for a brief period in June 1917, was 12.00 cents, New York.

The general policy of the Quota Committee pertaining to the Premium Price Plan for overquota mine production of domestic lead (copper and zinc were also included) prevailed through June 1946 but collapsed with the expiration of OPA and ceiling prices on June 30. Upon reestablishment of the OPA, provisions were made for retroactive premium payments to cover the period when no plan was in effect.

According to reports submitted to the Civilian Production Administration, Government stocks of refined lead, all corroding grade from foreign sources, was approximately 32,000 short tons on December 31, 1946, compared with 68,700 short tons of refined lead on January 1, 1946.

This report which summarizes mine output for 1946 is part of the regular monthly lead mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1947. The following table and State reviews for 1946 were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable lead content of ores and concentrates.

EASTERN STATES

Mine production of lead in the Eastern States increased slightly over 1945, and, as usual, came from properties in New York, Virginia, and Tennessee. Virginia mines produced 4,380 short tons of recoverable lead in 1946 compared with 4,243 tons in 1945. The Austinville mine and 2,000-ton flotation mill in Wythe County, which has been in continuous operation since 1924, operated at a slightly higher average monthly rate than in 1945. Lead production in New York increased from 862 tons in 1945 to 1,000 tons in 1946, all of which came from the Balmat mine of the St. Joseph Lead Co. Some lead was recovered in Tennessee from lead carbonate ore mined by the Tennessee Zinc Co. operating in the Embreeville district of Washington and Unicoi Counties.

CENTRAL STATES

Total lead output from mines in the Central States decreased 18 percent from 1945, largely owing to a lower output in the Southeastern Missouri region. This region, however, continued to be the largest lead-producing area in the United States with an output of 136,000 tons compared with 173,005 tons in 1945 and supplied 41 percent of the total domestic mine production. The mines of the St. Joseph Lead Co. in St. Francois County continued, as in the past, to produce the bulk of the output from its Bonne Terre, Desloge, Federal, and Leadwood groups of mines, each of which is equipped with a mill. The mills together have a total daily capacity of 21,400 tons of ore. The company also operated the Mine La Motte group and 1,500-ton mill in Madison County. The operating time of all five groups was reduced from 6 to 5 days a week in May, and about 8 operating days were lost in October as a result of a labor strike. Other properties in the Southeastern Missouri region which operated during the year included the Fredericktown Lead Co. Catherine and Fleming mines and 400-ton mill northwest of Fredericktown, the Park City Consolidated Ruth mine and 500-ton mill, and the St. Louis Smelting & Refining Co. Madison mine and 600-ton mill, all in Madison County. In Jefferson County the Desota Lead & Zinc Co. operated a mill at Valles Mines on zinc-lead carbonate ore from dumps, and the Silver Springs Mining Co. ran a small mill intermittently on ore of a similar type.

The Tri-State area (Joplin region) embracing southwestern Missouri, southeastern Kansas, and northeastern Oklahoma produced 7 percent of the total domestic lead output in 1946 compared with 6 percent in 1945 despite 3 weeks idleness of most of the mines and mills in July pending restoration of the Premium Price Plan. Illinois (output from northwestern Illinois mines which was milled in Wisconsin has been credited to that State) produced 3,931 tons of recoverable lead in 1946, a large protion of which was recovered as a byproduct from the fluorspar mine of the Mahoning Mining Co. near Cave in Rock, southeastern Illinois. The Alco Lead Co. operated an open-pit lead (mostly carbonate) mine and gravity-concentration mill near Elizabethtown. The Vinegar Hill Zinc Co. custom flotation mill at Cuba City, Wisconsin continued to treat crude ore and bulk zinc-lead-iron concentrates purchased from operators in Wisconsin and northern Illinois.

WESTERN STATES

Mine production of recoverable lead in the Western States (Alaska included) was 161,158 tons in 1946, a decline of 12 percent from 1945, and the smallest output since 1933. The Western States contributed 48 percent of the total domestic production compared with 47 percent in 1945.

Arizona. - In spite of a labor strike at some zinc-lead mines in Arizona during the spring months of 1946, which resulted in a loss of approximately 4,500 tons of lead, the State exceeded its 1945 record lead output by 883 tons (4 percent). The Copper Queen mine at Bisbee continued to be the largest lead producer in Arizona. During the second quarter of 1946 the capacity of the 450-ton flotation mill at the mine was doubled. Other large producers of lead were the Mammoth-St. Anthony property at Tiger, the San Xavier (Eagle-Picher Mining & Smelting Co.) south of Tucson, the Iron King mine at Humboldt, and the Trench-Flux group near Patagonia. These five properties produced 87 percent of the total 1946 Arizona lead output. About 92 percent of the lead production during the year was recovered from zinc-lead ores and the rest largely from lead ores.

California. - The Anaconda Copper Mining Co. produced more than three quarters of the 10,065-ton lead output of California in 1946 from the Darwin mine, Coso district, Inyo County. Most of the lead was recovered from direct smelting ore, although a flotation lead concentrate was produced. The Finley Co., operator of the Columbia No. 2 mine, Resting Springs district, Inyo County again ranked second in output, and Dunton-Ray and Greenwood, Mohawk mine, Clark Mountain district, San Bernardino County, third.

Colorado. - The Colorado production of recoverable lead in 1946 was 16,873 tons, virtually equal to the 1945 output. The Leadville district, Lake County continued to be the largest lead-producing area in the State. Among the larger producers were the Resurrection Mining Co., American Smelting & Refining Co. Leadville Milling Unit, Ore & Chemical Co., and John Hamm Mining and Milling, Ltd., in Lake County; Rico Argentine Mining Co. in Dolores County; New Jersey Zinc Co. in Eagle County; Denver Equipment Co. and Shenandoah Dives Mining Co. in San Juan County; Telluride Mines, Inc. in San Miguel County; Idarado Mining Co. in Ouray County (ore body in San Miguel County and production credited there); and American Smelting & Refining Co. Kokomo unit in Summit County.

Idaho. - Idaho continued to be the largest producer of lead in the Western States and second largest in the United States although the 1946 lead output declined 13 percent from 1945 owing to a lower lead content of the ores from mines in the Coeur d'Alene region, Shoshone County. The Bunker Hill & Sullivan mine remained the largest lead producer in Idaho in 1946, but its output declined about 19 percent from that in 1945. Other large producers in order of output were the Page, Osburn tailings, Star, Morning, Sweeny tailings, Tamarack & Custer, Sherman, Bunker Hill smelter slag, Triumph, Frisco, Dayrock, Spokane-Idaho, and Monitor properties; the first 9 properties — each with an output of more than 1,900 tons of lead — produced 67 percent of the State total. About 88 percent of the State total lead production came from zinc-lead ores and old tailings and the remainder largely from lead ores.

Montana. - The output of recoverable lead in Montana in 1946 was 8,850 tons, a decrease of 11 percent from 1945 and the lowest yearly production since 1933. The decline was rather uniformly distributed among all the larger producers, with the exception of the slag-fuming plant of the Anaconda Copper Mining Co. at East Helena where a gain in lead output occurred. The Mike Horse mine near Flesher again was the leading producer of lead in the State, followed in order by the Emma mine at Butte, the slag-fuming plant at East Helena, the Jack Waite mine in Sanders County, the Toledo-Buckeye group near Sheridan, and the Poulin and Travona mines at Butte. These seven sources contributed about 6,750 tons of lead in 1946, or 76 percent of the State total.

Nevada. - The 1946 production of recoverable lead in Nevada was 6,400 tons, a slight increase over the 1945 output. Most of the lead was recovered from concentrates produced in the Combined Metals Reduction Co. Pioche mill. Mines in the Pioche district produced approximately half of the lead in Nevada in 1946.

New Mexico. - In New Mexico the mine production of recoverable lead slumped to 5,012 tons in 1946, a decline of 35 percent from the 1945 output. The principal producers continued to be the Hanover Unit of the American Smelting & Refining Co., United States Smelting, Refining & Mining Co. Bayard mine, Empire Zinc Co. Hanover mine group, Kennecott Copper Corporation Oswaldo mine, and Black Hawk Consolidated Mines Co. Hobo mine, all in the Central district, Grant County; and the American Smelting & Refining Co. Magdalena Unit (Waldo mine) in the Magdalena district.

Utah. - Although lead output in Utah, the lowest since 1894, dropped 33 percent below the 1945 production, the State continued to rank second among the Western States with an output of 27,300 tons. The United States & Lark property of the United States Smelting, Refining & Mining Co. in the West Mountain (Bingham) district remained well in the lead among the State lead producers. It was followed in order by the New Park Mining Co. Park Galena and Mayflower properties in the Park City region, the Combined Metals Reduction Co. Calumet mine in the Rush Valley district, the Chief Consolidated Mining Co. property in the Tintic district, the Park Utah Consolidated Mines Co. Park Utah Consolidated group and the Silver King Coalition Mines Co. properties in the Park City region, the Tooele slag-fuming plant in Tooele County, the Tintic Standard Mining Co. Tintic Standard mine in the Tintic district, the Combined Metals Reduction Co. Butterfield property, and the National Tunnel & Mines Co. property, both in the West Mountain (Bingham) district. These 10 operations contributed 82 percent of the State total lead in 1946.

Washington. - The decline of 800 tons of recoverable lead in Washington in 1946 was due mainly to a reduced tonnage of zinc-lead ore from the Metaline district in Pend Oreille County and to a lower lead content of the ore treated. Ore production for the district in 1946 was about 11,000 tons less than in 1945, owing largely to the two-months' strike at the operations of the American Zinc, Lead & Smelting Co. and the Metaline Mining & Leasing Co. In addition to reduced tonnages, the ore produced by the two companies had a considerably lower lead content than in 1945. The Grandview mine of the American Zinc, Lead & Smelting Co. was the largest lead producer in Washington 1946, followed by the properties of the Pend Oreille Mines & Metals Co. and the Metaline Mining & Leasing Co., all in Pend Oreille County, and the Kaaba mine of the Kaaba-Texas Mining Co. in Okanogan County, which nearly doubled its 1945 lead output. These four properties produced about 90 percent of the State total lead in 1946.

Small quantities of lead were recovered from ores mined in Texas and Oregon.

Mine production of recoverable lead in the United States in 1946,
by months 1/, in short tons

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total 1946
Eastern States	497	568	671	684	264	522	438	487	405	402	309	303	5,550
Central States	16,607	15,149	16,023	15,361	13,671	12,056	11,426	13,728	13,420	11,458	13,471	13,400	165,770
Western States:													
Arizona......	2,230	2,355	1,740	1,030	975	985	2,335	2,700	2,350	2,400	2,250	2,400	23,750
California...	1,100	700	940	950	740	700	750	700	730	830	950	975	10,065
Colorado.....	1,213	1,495	1,454	1,262	1,580	1,631	1,483	1,571	1,114	1,240	1,480	1,350	16,873
Idaho........	6,000	5,750	6,000	5,600	4,800	4,400	4,300	4,600	4,600	4,600	4,600	4,600	59,850
Montana......	775	680	670	500	625	855	840	840	640	850	750	825	8,850
Nevada.......	550	550	500	500	575	410	440	550	550	575	600	600	6,400
New Mexico...	552	525	384	388	344	391	456	366	346	410	450	400	5,012
Oregon.......	-	-	-	-	2/	-	2/	2/	1	-	1	-	3
Texas........	-	-	-	-	-	-	6	13	3	10	11	12	55
Utah.........	2,700	1,475	1,700	1,625	1,700	1,510	2,450	2,940	2,800	2,800	2,700	2,900	27,300
Washington...	265	260	300	290	280	200	120	115	270	300	300	300	3,000
	15,385	13,790	13,688	12,145	11,619	11,082	13,180	14,395	13,404	14,015	14,092	14,362	161,158
Alaska.........	-	-	-	-	-	-	-	-	-	-	-	-	-
Total United States.......	32,489	29,507	30,382	28,190	25,554	23,660	25,044	28,610	27,229	25,875	27,872	28,065	332,478

1/ Revised figures.
2/ Less than 1 ton.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

For Release January 22, 1947

Mineral Market Reports
MMS No. 1492

METAL MINING IN IDAHO, 1946 - PRELIMINARY ANNUAL FIGURES

Throughout the year 1946 the mining industry of Idaho was still plagued with a serious shortage of labor and as a result the declines in the outputs of silver, lead, zinc, and copper in 1945 compared with 1944 were repeated, according to preliminary figures released by the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. However, gold mining in Idaho, especially dredging at placer properties, made a substantial recovery in 1946 after sharply curtailed activity since October 8, 1942, when War Production Board Order L-208 suspended most gold mining. In 1946 the State output of gold rose to 41,550 fine ounces from 17,780 fine ounces in 1945. The output of silver declined from 8,142,667 fine ounces to 5,985,000 fine ounces (more than 26 percent); copper, from 3,096,000 to 1,950,000 pounds (37 percent); lead, from 136,894,000 to 119,700,000 pounds (13 percent); and zinc, from 166,926,000 to 138,750,000 pounds (17 percent). Gold output had declined each year, except 1946, since 1941; silver output had declined each year, except 1940, since 1937; copper output had declined each year since 1941; lead output had declined each year since 1942 (the output in 1946 was the smallest since 1899); and zinc output had increased each year, except 1943, from 1938 through 1944 but had declined in 1945 and 1946. In 1946 the State remained the largest producer of silver in the United States; it was the largest producer of zinc west of Oklahoma and of lead, west of Missouri.

The preliminary figures for 1946 are based on actual mine production reported by operators and receipts at smelters and the United States mints covering 10 months with November and December production calculated from other sources of information.

At the average prices used by the Bureau of Mines, the gross calculated value of the output of these metals in Idaho in 1946, with comparative figures for 1945 in parentheses, was: Gold, $1,454,250 ($622,300); silver, $4,835,880 ($5,790,341); copper, $313,950, ($417,960); lead, $12,089,700 ($11,772,884); and zinc, $17,205,000 ($19,196,490)—a total of $35,898,780 in 1946 compared with $37,799,975 in 1945, a loss of 5 percent. In 1946 the value of the gold output was 4 percent of the total value; silver, 13 percent; copper, 1 percent; lead, 34 percent; and zinc, 48 percent.

The price of gold ($35 per ounce), fixed by the United States Government, remained the same throughout 1946. The average price of silver rose from $0.711¼ per ounce to $0.808 per ounce; the average weighted yearly price of copper increased from $0.135 to $0.161 a pound, lead from $0.086 to $0.101 a pound, and zinc from $0.115 to $0.124 a pound. In calculating average weighted prices for copper, lead, and zinc in 1946 allowance is made for overquota bonus payments.

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, Metal Economics Division, Economics and Statistics Branch.

The output (41,550 ounces) of gold in Idaho in 1946 was the greatest since 1942 and more than double that in 1945. This gain resulted mainly from the resumption dredging operations in Boise, Custer, Elmore, Idaho, and Lemhi Counties. About ha of the gold produced in Idaho in 1946 was recovered from gold-tungsten-antimony ore from the Yellow Pine mine at Stibnite, gold ore from the Boise-Rochester-Monarch (Talache Mines, Inc.) property at Atlanta, zinc-lead ore from the Triumph property near Hailey, and zinc-lead ore from various mines in the Coeur d'Alene region. Most of the remainder of the gold was recovered from either bucket or dragline dredging in the Boise Basin, Middle Boise, Yankee Fork, Gibbonsville, Elk City, and Orogrande districts. The output of gold from lode mines was about 21,500 ounces in 1946 compared with 16,011 ounces in 1945, and that from placers 20,050 ounces compared with 1,769 ounces. The Idaho-Canadian Dredging Co. operated its 7½-cubic foot bucket dredge at Idaho City in Boise County most of the year; in March the Baumhoff-Marshall Co. (formerly Fisher-Baumhoff Co.) resumed operating its 6-cubic foot bucket dredge at the Wharton property near Centerville in Boise County; in May the Snake River Mining Co. resumed operating its 8-cubic foot bucket dredge at property on Yankee Fork in Custer County; in May the Pyramid Mining Co. began operating its 7½-cubic foot bucket dredge at the Boise King Placers on the Middle Fork of the Boise River in Elmore County; in June Bangasser & Smith began operating its 2-cubic foot bucket dredge on the Crooked River in Idaho County; and in April the Smith Bros. & Courtis Dredging Co. resumed operating its dragline and floating washing plant near Gibbonsville in Lemhi County. The largest producer of gold in Idaho in 1946 was the Bradley Mining Co. (Yellow Pine mine); it was followed by the Talache Mines, Inc., Snake River Mining Co., Pyramid Mining Co., Baumhoff-Marshall Co., Triumph Mining Co., Idaho-Canadian Dredging Co., and Smith Bros. & Courtis Dredging Co.

Despite an increase in the average price of silver to $0.808 per fine ounce in 1946, Idaho's output of silver declined to 5,985,000 fine ounces (2,157,667 ounces less than that in 1945), resulting principally from a shortage of underground miners. Nevertheless, the State remained the largest producer of silver in the United States —a place it has held since 1933. Substantial decreases in output of silver were recorded in 1946 from the Sunshine, Osburn tailing dump, Sherman, Morning, and Triumph properties. About 54 percent of the State output of silver in 1946 was recovered from zinc-lead ore and old tailings, and the remainder largely from lead ore and silver ore. The Sunshine mine remained the largest producer of silver in the State; it was followed by the Bunker Hill & Sullivan, Polaris, Osburn tailing dump, Silver Dollar, Triumph, Page, Morning, Star, Sweeny tailing dump, and Sherman mines, all except the Triumph property in the Coeur d'Alene region.

The copper output of Idaho in 1946 was approximately 1,950,000 pounds, a 37-percent loss from 1945; most of the copper was recovered as a byproduct in the treatment of silver ore and zinc-lead ore and old tailings from mines in the Coeur d'Alene region.

Lead production in Idaho continued to decrease and in 1946 it was 17,194,000 pounds less than that in 1945; however, the value of the output was $316,816 more than that in 1945 owing to an increase in the average price of the metal. The loss in quantity resulted mainly from curtailment in output of zinc-lead ore and from a lower lead content of the ores from mines in the Coeur d'Alene region, Shoshone County, the chief source of lead in Idaho. Marked decreases in output of lead were recorded in 1946 from the Bunker Hill & Sullivan, Osburn tailing dump, Sherman, Morning, Monitor, Triumph, and Frisco properties. The Bunker Hill & Sullivan mine remained the largest lead producer in Idaho in 1946, but its output declined about 19 percent from that in 1945. Other large producers of lead in order of output were the Page, Osburn tailings, Star, Morning, Sweeny tailings, Tamarack & Custer, Sherman, Bunker Hill smelter slag, Triumph, Frisco, Dayrock, Spokane-Idaho, and Monitor properties; the first 9 properties—each with an output of more than 3,800,000 pounds of lead—produced 67 percent of the State total. About 88 percent of the State lead output came from zinc-lead ore and old tailings, and the remainder largely from lead ore.

The output of recoverable zinc (138,750,000 pounds) in Idaho in 1946 was nearly 17 percent less than that in 1945. Marked decreases in zinc output were recorded from the Morning, Osburn tailing dump, Monitor, Tamarack & Custer, Frisco, and Triumph properties. Substantial increases in zinc output were recorded from the Page and Sidney mines. The Bunker Hill zinc slag-fuming plant continued to be the largest producer of zinc in Idaho; it was followed by the Star, Osburn tailings, Page, Morning, Tamarack & Custer, Bunker Hill & Sullivan mine, Frisco, Spokane-Idaho, Monitor, Sidney, Triumph, Little Pittsburg, Sweeny tailings, Sunset, and Highland-Surprise properties. These 16 properties, all except the Triumph in the Coeur d'Alene region, produced 91 percent of the State total.

About 2,950,000 tons of ore and old tailings were treated in Idaho in 1946 compared with 3,139,286 tons in 1945. This loss resulted principally from less zinc-lead ore, lead ore, and silver ore treated in 1946 than in 1945. Approximately 89 percent of the total in 1946 came from 40 mines and 6 tailing dumps in the Coeur d'Alene region; the remainder was mostly gold-tungsten-antimony ore from Valley County, zinc-lead ore from Blaine, Custer, and Valley Counties, and silver-tungsten ore from Lemhi County.

In 1946 about 40 mines and 6 tailing dumps in the Coeur d'Alene region produced 88 percent of the State silver output, 75 percent of the copper, 96 percent of the lead, and 96 percent of the zinc; the rest of the silver, copper, lead, and zinc came largely from the Warm Springs district in Blaine County, the Bay Horse district in Custer County, the Deadwood Basin district in Valley County, and the Lava Creek district in Blaine and Butte Counties. The production of gold from the Coeur d'Alene region decreased from 1,898 ounces in 1945 to 1,550 ounces in 1946, silver from 7,115,646 to 5,300,000 ounces, copper from 2,036,000 to 1,470,000 pounds, lead from 126,860,000 to 114,500,000 pounds, and zinc from 156,059,000 to 133,500,000 pounds. Following the Coeur d'Alene region, the Warm Springs district near Ketchum, Blaine County, remained the most important producing area in Idaho, although its output of each metal was less than in 1945. The output of the district was virtually all zinc-lead ore from the property operated by the Triumph Mining Co., which treated about 54,000 tons of low-grade zinc-lead ore in its own 300-ton concentration mill at Triumph, Idaho, and shipped about 14,800 tons of zinc-lead ore to Bauer (Utah) for reduction.

Idaho has one lead smelter and refinery—the Bunker Hill & Sullivan Mining & Concentrating Co. plants at Bradley. The annual rated capacity of the smelter is 225,000 tons of feed per year, but in 1946 the plant was operated below capacity on crude ore and concentrates chiefly from mines and mills in the Coeur d'Alene region. The company also operated its antimony, bismuth, cadmium, and zinc slag-fuming plants at Bradley. In 1946 the zinc slag-fuming plant treated about 145,000 tons of hot current slag and reclaimed cold slag, which produced 22,600 dry tons of zinc fume and 3,930 tons of lead fume. The Sullivan Mining Co. operated continuously at capacity its 100-ton electrolytic zinc plant (450-cell) near Bradley on zinc and zinc-lead concentrates produced mainly from concentration mills in the Coeur d'Alene region.

Idaho mills treating zinc-lead ore and old tailings in 1946 had a total rated milling capacity of about 9,500 tons of ore per day, and mills treating lead ore approximately 2,000 tons. Seven of the principal concentrating mills that treated zinc-lead ore were: The Bunker Hill & Sullivan (1,800-ton) at Kellogg; the Morning (1,300-ton) at Mullan; the Star (1,000-ton) at Burke; the Hecla (900-ton) at Burke;

the Page (500-ton) near Kellogg; the Tamarack & Custer (400-ton) near Burke; and the Polaris (300-ton) near Osburn. The Sunshine Mining Co. operated its 1,200-ton concentrator near Kellogg eleven months of the year on silver-lead ore and silver ore from the Sunshine, Polaris, Silver Dollar, and Silver Syndicate mines. Antimony, tungsten, and antimony-gold concentrates were produced intermittently in 1946 in the 800-ton mill of the Bradley Mining Co. at Stibnite, and tungsten concentrates and silver-copper-lead concentrates were produced in the 200-ton Ima mill at Patterson. The Hecla Mining Co. operated continuously its 2,500-ton sink-float-flotation plant at Osburn on old zinc-lead tailings. The sink and float unit screened and cleaned about 950,000 tons of old tailings in 1946; part of the resulting zinc-lead middling was treated in the flotation unit at the plant, and part was shipped to the Hecla and Polaris flotation mills where it was separated into lead concentrate and zinc concentrate. Two new milling plants were erected during the year in the Pine Creek area of the Coeur d'Alene region—a 250-ton flotation mill was built at the Nabob mine, and a similar mill at the Sidney mine.

Mine production of gold, silver, copper, lead, and zinc in Idaho in 1946, by months 1/, in terms of recovered metals

	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
January........	1,100	420,000	140,000	12,000,000	12,700,000
February......	720	500,000	170,000	11,500,000	12,400,000
March..........	1,880	525,000	170,000	12,000,000	13,700,000
April..........	2,000	455,000	150,000	11,200,000	12,000,000
May............	5,400	450,000	120,000	9,600,000	11,200,000
June...........	5,580	440,000	170,000	8,800,000	11,300,000
July...........	5,750	505,000	170,000	8,600,000	10,300,000
August.........	5,570	537,000	170,000	9,200,000	10,800,000
September.....	3,600	500,000	160,000	9,200,000	10,700,000
October.......	2,750	500,000	160,000	9,200,000	11,350,000
November......	3,700	600,000	190,000	9,200,000	11,100,000
December......	3,500	553,000	180,000	9,200,000	11,200,000
	41,550	5,985,000	1,950,000	119,700,000	138,750,000
Total 1945....	17,780	8,142,667	3,096,000	136,894,000	166,926,000

1/ Revised figures.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

For Release January 22, 1947

MINERAL MARKET REPORTS
MMS NO. 1493

COPPER IN 1946
(Preliminary Report)

During much of 1946 the copper industry was adversely affected by labor and reconversion problems that plagued the entire national economy, rather than by basic problems peculiar to the copper industry, according to the Bureau of Mines, United States Department of the Interior. Labor strikes at mines, smelters and refineries were the chief depressant to domestic production and these strikes on top of the chronic labor shortage prevented producers from attaining the maximum output required by current consumption levels. Mine production declined 22 percent from 1945, smelter production from domestic ores, 24 percent, and refinery production from domestic ores, 20 percent. Total refinery output from primary materials of domestic and foreign origin fell 18 percent. The domestic figures were not greatly in excess of half of the high record totals for 1943. Uncertainty regarding the extension of the Office of Price Administration, the month-long interim during which OPA was inoperative, and finally the anticipation of the withdrawal of ceiling price restrictions on copper, had disturbing repercussions on production and interfered with or prevented the making of adequate industry or Government plans for the future. The ceilings on most commodities, including copper, were canceled in November. The Strategic and Critical Materials Stockpiling Act, signed by the President in July, was generally considered to be a favorable influence on domestic metal markets. In reluctantly signing the measure the President stated that the "buy-American" provisions would not only materially increase the cost of the proposed stock piles but would tend to defeat the conservation and strategic objectives of the bill. Curtailed purchases of foreign copper by the Reconstruction Finance Corp. and discontinuance of such purchases in November reduced the quantity of foreign copper available for consumption in the United States, despite the urgent need for metal from abroad to fill the excess of demand over supply from domestic mines. Private industry could not bring foreign copper into the country under ceiling price limitations because of the 4-cent excise tax which was considered inapplicable to imports brought into the country by Government purchase. Moreover, when the foreign price advanced, the Government could absorb the excess of foreign prices over the ceiling price, and did so for a period. The gap between new supply and the continuing large demand was bridged by a sharp reduction in Government inventories.

Contract negotiations between management and labor were in progress at fabricating plants during the fall of 1945. Strikes at these plants became serious in January 1946. January also witnessed the beginning of the five-month strike at

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Prepared by Helena M. Meyer, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

the largest copper-producing mine in the United States, the Bingham Canyon mine of the Utah Copper Co. Smelter and refinery strikes spread most rapidly when the smelters and refineries of the American Smelting & Refining Co. went on strike in February. Large Arizona mines went on strike in March and the strike at mines of the Anaconda Copper Mining Co. in Montana began and ended in April. The coal strike caused a shut-down approximating one month in copper operations in Michigan near the close of the strike-enforced idleness at other copper mines and plants. Copper mine, smelter, refinery and fabricating plant strikes, for 1946 at least, were virtually over by the end of June, having reduced production seriously in the entire first half of the year; production, however, continued to be affected adversely for some weeks longer.

Important copper producers outside of the United States, notably in Chile and Northern Rhodesia also experienced labor strikes that reduced the output of copper abroad in 1946.

In mid-year 1946 the ceiling price for copper had its first rise since August 12, 1941, when the control was established; the ceiling of 12 cents a pound for electrolytic copper, delivered Connecticut Valley, was raised, effective June 3, to 14 3/8 cents contingent upon the completion of certain wage agreements. With the gain in price, bonuses were reduced 2 3/8 cents a pound. The month-long period of uncertainty between the demise of OPA and the signing of the bill for its extension had a deleterious effect on copper production, particularly at properties whose operation was largely dependent on bonus payments. All price controls on copper were removed in November and the price rose immediately to 17.50 cents, and reached 19.50 cents by the year-end. Premiums continued to be paid. The gross premium per pound to those qualified under the Premium Price Plan remained inflexible, however, with the result that rising prices reduced the burden on the Government. Further details on prices are covered in the last paragraph of this report.

Foreign trade in copper, although still far from its prewar status, trended somewhat away from the abnormal war pattern in 1946; there was evidence, however, that the United States would not resume its prewar position as a large exporter of copper. Prior to 1941 the unrefined copper class dominated the unmanufactured import group, except in 1932, for many years. During the war refined copper led by a very substantial margin, but in 1946 the unrefined class resumed supremacy, though by a much smaller margin than previously. Refined copper imports in 1946 continued far in excess of the levels attained prior to World War II, but probably amounted to not much more than one-fourth of the high record rate attained in 1945. Total imports of unmanufactured copper (when figures for December are available) probably will show a drop of over 50 percent from 1945.

Refined copper again became the principal export class in 1946, following its displacement by insulated wire and cable in 1945 and 1946. Total refined exports for 1946 will probably approximate those for 1945 when December figures are added; those for insulated wire and cable dropped sharply .

Production.—Results of the preliminary survey on copper, covering 11 months' actual figures plus company estimates for December, are given below.

Copper produced by smelters from domestic ores, 1942-46, in short tons

1942	1,087,991
1943	1,092,939
1944	1,003,379
1945	782,726
1946	594,000

The estimated smelter production for December amounted to 74,000 tons or 57 percent above the average for the preceding 11 months. The total for the year was 24 percent less than in 1945.

Refinery production of new copper from domestic sources dropped 20 percent in 1946 and that from foreign sources decreased 14 percent; altogether a decrease of 18 percent in total production from primary materials is indicated.

Refined copper produced at primary plants from domestic and foreign ores and from secondary material, 1942-46, in short tons

Year	Domestic ores	Foreign ores	Total new copper	Secondary
1942	1,064,792	349,769	1,414,561	85,143
1943	1,082,079	297,184	1,379,263	122,464
1944	973,852	247,335	1,221,187	86,398
1945	775,738	332,861	1,108,599	96,662
1946	618,000	286,000	904,000	88,000

Production of secondary copper at primary refining plants was estimated to have declined 9 percent from the 1945 rate.

Foreign trade.—Statistics on imports and exports are compiled from records of the Department of Commerce. Although complete data are not yet available total imports of unmanufactured copper in 1946 probably will be considerably less than half of the record-breaking receipts in 1945. For the first time since 1940 refined copper failed to be the chief import class. Refined copper entries were of little importance, however, from the time the excise tax was placed on copper in 1932 until 1940.

Copper (unmanufactured) imported into the United States in January–November 1946,
by countries, in short tons
(general imports)

	Ore (copper content)	Concentrates (copper content)	Regulus, black or coarse copper (copper content)	Unrefined black blister and converter in pigs or converter bars	Refined in ingots, plates, or bars	Old and clippings for remanufacture
Belgian Congo..............	(1)	------	----	4,468	------	---
Bolivia..................	----	2,814	----	----	------	---
Canada....................	1	6,216	77	----	17,193	513
Chile.....................	857	1,687	1	56,013	123,804	37
Cuba......................	----	11,641	----	-------	--------	---
Mexico....................	2,692	3,665	291	50,714	--------	---
Newfoundland and Labrador..	-----	4,443	2	-------	--------	13
Northern Rhodesia.........	2/ 2	2/ 258	----	11,682	--------	---
Peru......................	81	2,252	165	23,862	--------	---
Turkey....................	-----	-------	-----	17,414	--------	---
Union of South Africa......	-----	137	147	4,297	866	32
Other countries...........	3	102	2	6,255	--------	381
	3,636	33,215	685	174,705	141,863	976

1/ Less than one-half ton.
2/ Includes copper credited to Southern Rhodesia.

The feature of the export market during World War II was the sharp gain in shipments of insulated wire and cable. This class established new high records for 5 successive years but dropped sharply at the end of the war. Insulated wire and cable superceded refined copper as the chief export class in 1944 and continued preeminent in 1945. Refined copper had ranked first in the copper export group, usually by a very substantial margin, since before 1900; it resumed the outstanding position in 1946. Refined copper exports for all of 1946 probably will approximate those for 1945, whereas shipments of insulated wire and cable probably dropped in half.

Copper exported from the United States in January-November 1946, by countries, in short tons

Country	Ore, concentrates, composition metal and unrefined copper (copper content)	Refined in bars, ingots, etc.	Old and scrap	Pipes and tubes	Plates and sheets	Rods	Wire (bare)	Insulated wire and cable
Brazil	(1)	4,452	14	392	833	47	215	419
China	5	986	-	45	51	6	476	494
France	-	7,825	765	-	(1)	(1)	100	567
India and Dependencies	-	5,651	-	3	6	-	7	222
Mexico	3	832	2	463	207	29	98	1,096
Netherlands	-	1,288	-	9	7	1,061	3	12
Sweden	-	4,698	-	87	23	-	6	247
Switzerland	-	5,396	103	48	(1)	727	27	(1)
U. S. S. R.	-	43	-	-	24	24	151	11,596
United Kingdom	-	6,553	-	-	(1)	-	-	44
Other	13	5,268	25	1,498	2,164	489	2,962	12,318
	21	42,992	909	2,545	3,315	2,383	4,046	27,115

1/ Less than one-half ton.

Stocks.—Producers estimated that stocks of refined copper at refineries would total 108,000 tons at the end of 1946, or a drop of 17 percent during the year. Stocks of blister at smelters, in transit to refineries and of unrefined materials at refineries were expected to be 24 percent lower at the end than at the beginning of the year. Bureau of Mines' stocks are on a physical basis showing metal at smelters and refineries and in transit to refineries, regardless of ownership. The figures in the following table are duplicated in part, therefore, by stocks of the Office of Metals Reserve.

Stocks of copper at primary smelting and refining plants at the end of the year, 1942-46, in short tons

Year	Refined copper	Blister and unfinished materials
1942	84,000	235,500
1943	68,500	241,000
1944	81,000	311,000
1945	130,000	331,000
1946	108,000	253,000

Apparent consumption.—Preliminary figures indicate that 33 percent less new copper entered into consumption channels in 1946 than in 1945. These figures refer to apparent consumption, but they do not take consumers' and Office of Metals Reserve inventories into account. Consumption of new copper, according to the calculations, approximated 1,033,000 short tons, compared with 1,542,403 tons in 1945. The method of calculation of apparent consumption is shown as follows:

New refined copper withdrawn from total year's supply on domestic account, 1945-46, in short tons

	1945	1946
Refinery production of new copper from domestic sources	775,738	618,000
Refinery production of new copper from foreign sources	332,861	286,000
	1,108,599	904,000
Imports of refined copper (Dec. 1946 estimated)	531,367	155,000
Total new refined	1,639,966	1,059,000
Stocks of new refined copper on January 1	81,000	130,000
Total supply	1,720,966	1,189,000
Exports of refined copper (ingots, bars, or other forms) (December 1946 estimated)	48,563	48,000
Stocks December 31	130,000	108,000
	178,563	156,000
Total withdrawn on domestic account	1,542,403	1/ 1,300,000

1/ Allowance has been made for reduction in the Office of Metals Reserve inventories of refined shapes.

Prices.--The ceiling price for electrolytic copper was 12 cents a pound, delivered Connecticut Valley, from August 12, 1941 through May 1946. The ceiling was raised, effective June 3, to 14 3/8 cents for producers who had signed approved wage contracts since February 14, 1946, and simultaneously "A" premiums were reduced 2 3/8 cents a pound. Later in the year the ceiling price became general at 14 3/8 cents. A bill to extend the Office of Price Administration was vetoed by the President and for most of the month of July there were no ceiling prices, and copper producers were reluctant to sell at firm prices. The Premium Price Plan expired with the Office of Price Administration, but after the OPA was extended, effective July 26, provisions were made for retroactive premium payments to cover the period when no plan was in effect. The discarding of ceiling prices on most commodities in November was followed by a sharp rise in the price for copper to 17 1/2 cents a pound. After the Reconstruction Finance Corp. discontinued the making of foreign copper purchase contracts in November, and the excise tax again became applicable to imports by private industry, domestic producers raised their price to 19 1/2 cents a pound, at which level it remained to the end of the year. The estimated average weighted price for copper delivered, f.o.b. refinery and including allowance for premiums paid for overquota production, was 16.1 cents a pound in 1946 compared with 13.5 cents in 1945.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

For release January 24, 1947.

MINERAL MARKET REPORT
MMS NO. 1494.

MINE PRODUCTION OF ZINC IN THE UNITED STATES IN 1946 - PRELIMINARY ANNUAL FIGURES

Despite an average market price for Prime Western grade zinc, St. Louis, which was greater than any year since 1917, the domestic mine production of zinc continued to decline in 1946 for the fourth consecutive year and reached the lowest level since 1938, according to the Bureau of Mines, United States Department of the Interior. In 1946 the total mine production of recoverable zinc in the United States (including that recovered as zinc pigments and salts directly from ore) was 565,787 short tons, a decrease of 8 percent from 1945. At the average weighted yearly price of $0.124 per pound, which includes allowance for premiums paid for overquota production, the 1946 output was valued at $140,315,176. This compares with a value of $141,302,340 in 1945, which was calculated at the average weighted price for that year of $0.115.

Prolonged strikes at mines and smelters, especially in western United States, and a continued shortage of labor were the principal factors which restrained producers from operating at rates equal to or greater than in 1945. Work stoppages in 1946 began in Utah on January 21 when approximately 1,300 workers at the American Smelting & Refining Co. Murray lead smelter and the United States Smelting, Refining & Mining Co. West Mountain (Bingham) district lead-zinc mine and Midvale concentrator went out on strike following collapse of negotiations for an increased wage scale consonant with the changing economic conditions. Workers at certain Colorado and Arizona lead-zinc mining and milling operations of the American Smelting & Refining Co. and the Phelps Dodge Corporation joined the strike on February 25 and March 20, respectively. Lead smelters operated by the American Smelting & Refining Co. in California, Colorado, Montana, Nebraska, New Jersey, and Texas also became strike-bound on February 25, and although these closures did not restrict the output of mines producing zinc alone, many zinc-lead operations were forced to close owing to limited storage facilities for ore and concentrate production and insufficient capital return to cover operating expenses. These strikes continued to hamper lead mining in the West until the end of June when new labor contracts were negotiated and signed by operators and officials of the labor union. Zinc mine production in the Eastern States was impeded by labor strikes at the mines of the American Zinc Co. of Tennessee in Knox and Jefferson Counties, Tennessee, from February 2 through May 4 and at mines of the New Jersey Zinc Co. in New Jersey from mid-June to August 17.

Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

The shortage of mine and mill labor continued to be a potent factor limiting domestic mine output during 1946. The predicted return to the mines of former employees who migrated to the cities for high-paying wartime jobs fell far short of expectations. Likewise, a large percentage of the labor supply which entered the armed services during the war failed to return upon demobilization.

The base ceiling price established by the Office of Price Administration of 8.25 cents a pound for Prime Western-grade slab zinc at St. Louis remained unchanged through June 30. A bill to extend the OPA was vetoed by the President on June 29 and on July 3 following expiration of the OPA and the collapse of the Premium Price Plan the price of zinc advanced to 9.50 cents, St. Louis. With the reestablishment of the OPA by legislative action on July 25, the former ceiling price of 8.25 cents became effective and prevailed until October 14 when the OPA announced an upward revision in the ceiling price of 1 cent per pound, establishing the market at 9.25 cents, St. Louis. The decontrol order issued by the President on November 9 included the removal of ceiling prices from all metals and opened the way for a further price advance to 10.50 cents, St. Louis on November 12.

The general policy of the Quota Committee pertaining to the Premium Price Plan for overquota mine production of domestic zinc (copper and lead were also included) prevailed through June 1946 but collapsed with the expiration of OPA and ceiling prices on June 30. Upon reestablishment of the OPA, provisions were made for retroactive premium payments to cover the interim when no plan was in effect.

This report which summarizes mine output for 1946 is part of the regular monthly zinc mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1947. The following table and State reviews for 1946 were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable zinc content of ores and concentrates.

Eastern States

The mine production of zinc in the Eastern States in 1946 decreased 11 percent in quantity for the third consecutive year and reached the lowest level since 1933. Labor strikes shut down 5 mines in Tennessee for 3 months and 2 mines in New Jersey for 2 months, causing large decreases in output from these two States. In New York the zinc output increased 32 percent and in Virginia 5 percent.

New Jersey. - Although the zinc mines in New Jersey were idle from June 17 to August 17 because of the labor strike, the State continued in 1946 to be the leading producer of zinc in the Eastern States and to rank third in the United States. The State output of recoverable zinc as metal or in oxide was approximately 64,250 tons compared with 81,392 tons in 1945. The producing mines in both years were the Mine Hill at Franklin and the Sterling Hill at Ogdensburg, Sussex County.

New York. - The production of recoverable zinc in New York increased from 24,978 tons in 1945 to 32,900 tons in 1946. The producing mines, as in recent years, were the Balmat and Edwards mines of the St. Joseph Lead Co. in St. Lawrence County.

Tennessee. - Zinc production in Tennessee decreased from 33,824 tons in 1945 to 24,240 tons in 1946. The decrease was in part due to a labor strike lasting from February 2 to May 4 at the mines of the American Zinc Co. of Tennessee. Another contributing factor was the exhaustion in January of the company Shallow Ore open-pit mine, an important source of zinc since it was opened in October 1943. Other producing mines were the Grasselli, Jarnagin, Mascot No. 2, Mascot Graves, and Mossy Creek. The ore from all six mines was concentrated in the 4,000-ton mill at the Mascot No. 2 mine. The Davis-Bible group of mines of the Universal Exploration Co. at Jefferson City continued to be a large producer in 1946. The Tennessee Copper Co. at Ducktown, Polk County, produced zinc concentrates as a byproduct of its copper-iron mining and milling operations. Other producing mines were the Tennessee Zinc Co. property in the Embreeville district in Washington and Unicoi Counties and the Hoover mine in Cannon County, east of Murfreesboro.

Virginia. - The output of recoverable zinc in Virginia was approximately 16,925 tons compared with 16,075 tons in 1945. The Austinville mine, which has been in continuous operation since 1924, operated at a slightly higher average monthly rate than in 1945.

Central States

The Central States (comprising in order of output Oklahoma, Kansas, Missouri, Wisconsin, Illinois, Kentucky, and Arkansas) produced 162,500 tons of recoverable zinc in 1946 compared with 164,225 tons in 1945.

Tri-State (Joplin) region. - The Tri-State (or Joplin) region of northeastern Oklahoma, southeastern Kansas, and southwestern Missouri produced 138,493 tons of zinc, 85 percent of the Central States total zinc, and 24 percent of the United States total zinc output in 1946. The average recovery of combined zinc and lead from crude ore declined from 3.36 percent in 1945 to 3.12 percent in 1946, and the recovery from old tailings remilled from 0.37 to 0.33 percent. Old tailings yielded 13 percent of the total zinc concentrates in 1946 and 16 percent in 1945. Most of the mines and mills in the district were shut down about 3 weeks in July pending reinstatement of the Premium Price Plan, and a few were closed for other short periods by labor strikes. About 43 mills were operating in December 1946, of which 14 were tailing mills, compared with 50 in December 1945, including 16 tailing mills. The mine mills, a number of which treated company and custom ore, together served about 170 mines operated by 75 companies. The Eagle-Picher Mining & Smelting Co. was the largest individual producer of both zinc and lead in the district. The company operated about 26 mines in the Picher, Galena, and Oronogo areas and its 15,000-ton Central mill at Cardin (Okla.) on company account and the Paxson mine group and mill as agent for the Reconstruction Finance Corporation. Other large producers from mine dirt included the St. Louis Smelting & Refining Co., Federal Mining & Smelting Co., Kansas Explorations, Inc., United Zinc Smelting Corporation, American Zinc Co., and Beck Mining Co.

Arkansas. - Approximately 138 tons of recoverable zinc was produced in Arkansas in 1946 from zinc carbonate concentrates produced at the Big Hurricane mine in Searcy County, Mine 16 in Marion County, and the Brewer mine in Newton County.

Illinois. - Illinois mines produced 8,771 tons of zinc in 1946, a slight increase over the 1945 output. In northern Illinois the Tri-State Zinc, Inc., continued to operate the Gray mine and flotation mill and in June expanded its operations to include the newly developed Bautsch mine. Ore was shipped to the Vinegar Hill custom flotation mill at Cuba City, Wis., from the Big Six (North Unity), Bennett (South Unity), and Ginte mines. In southern Illinois the Mahoning Mining Co. operated its fluorspar-zinc-lead mines in the Cave in Rock area and flotation mill at Rosiclare. Besides company ore, the mill treated ore and bulk concentrates containing zinc, lead, and fluorspar from other mines in Illinois and Kentucky. The Minerva Oil Co. fluorspar-zinc mine and flotation mill north of Cave in Rock were operated steadily.

Kentucky. - Mines in Kentucky produced 273 tons of recoverable zinc in 1946 compared with 182 tons in 1945. The K. T. Dome Mining Syndicate operated the old Gratz zinc-lead mine and 50-ton mill at Gratz in Owen County. Some fluorspar producers in Crittenden and Livingston Counties shipped byproduct zinc concentrates to smelters and byproduct material containing zinc, lead, and fluorspar to the Mahoning mill at Rosiclare, Ill.

Wisconsin. - The Wisconsin zinc and lead mining area is in the Upper Mississippi Valley region, which includes adjacent parts of Illinois and Iowa. The Iowa part has had no production since 1917. The zinc-lead mining area in Wisconsin (Grant, Iowa, and Lafayette Counties) yielded 14,365 tons of recoverable zinc compared with 15,561 tons in 1945. The Vinegar Hill Zinc Co. custom flotation mill at Cuba City treated crude ore and bulk zinc-iron-lead concentrates purchased from operators in both Wisconsin and northern Illinois.

Western States

The Western States contributed 47 percent of the total domestic output of zinc (48 percent in 1945) despite a 10-percent decline to the lowest level of output since 1940. Mines in the combined Western States produced a total of 264,972 tons of zinc in 1946 compared with an output of 293,864 tons in 1945.

Arizona. - Each year for the past seven Arizona has succeeded in making a record output of zinc. In 1946 the output of 42,500 tons exceeded the 1945 production by 2,269 tons (6 percent) and placed the State second in rank among zinc-producing Western States. Although the Copper Queen mine at Bisbee, by far the largest producer of zinc in Arizona in 1945 and 1946, was strike-bound more than three months of 1946, the mine increased its output nearly 15 percent over 1945. Other large producers of zinc were the Iron King, Mammoth-St. Anthony, San Xavier, Republic (Coronado Copper & Zinc Co.), and Trench-Flux properties. In 1946 these six properties produced 90 percent of the State zinc output. About 85 percent of the zinc output was recovered from zinc-lead ores and nearly all the remainder from zinc-copper and zinc ores.

California. - Mine output of recoverable zinc in California was 7,105 tons, a decrease of 28 percent from 1945. The largest producer in 1946 was the Shawmut Copper Mine Co., operator of the Penn mine, Campo Seco district, Calaveras County; more than half the State's zinc output came from this property. Production of zinc concentrate by the Mountain Copper Co., Ltd., from ore of the Mattie orebody in the Hornet mine, Flat Creek district, Shasta County, continued throughout 1946 at a greater rate than in 1945 and placed the operation second in rank as a zinc producer in the State.

Colorado. - The output of recoverable zinc in Colorado was 33,818 tons in 1946, a decline of 5 percent from 1945. Nearly half of the State total output of zinc came from the Eagle mine of the New Jersey Zinc Co. Empire Zinc Division at Gilman, Eagle County. Other large producers of zinc in Colorado in 1946 included the Rico Argentine Mining Co. at Rico, Dolores County; Resurrection Mining Co., Ore & Chemical Co., and American Smelting & Refining Co. Leadville Milling Unit in Lake County; Telluride Mines, Inc., in San Miguel County; Idarado Mining Co. in Ouray County (orebody in San Miguel County and production credited there); King Lease, Inc., in Ouray County; and Shenandoah-Dives Mining Co. and Denver Equipment Co. in San Juan County.

Idaho. - Idaho continued to be the largest zinc-producing State in the Western States although the 1946 output of 69,375 tons was 17 percent below the 1945 production. The Bunker Hill zinc slag-fuming plant ranked first among Idaho zinc producers; it was followed by the Star, Osburn tailings, Page, Morning, Tamarack & Custer, Bunker Hill & Sullivan mine, Frisco, Spokane-Idaho, Monitor, Sidney, Triumph, Little Pittsburg, Sweeny tailings, Sunset, and Highland-Surprise properties. These 16 properties, all, except the Triumph, in the Coeur d'Alene region, produced 91 percent of the State total zinc output.

Montana. - Zinc production in Montana in 1946 was 15,800 tons, a decrease of 9 percent from 1945. The slag-fuming plant of the Anaconda Copper Mining Co. at East Helena recorded an increase of recoverable zinc creditable to Montana, as did the Broadwater group near Neihart, but all other important producers experienced declines. The slag-fuming plant was the leading source of zinc in 1946, followed in order by the Emma, Mike Horse, Poulin, Toledo-Buckeye, Travona, Broadwater, and Forest Rose properties. These eight properties supplied over 94 percent of the State total zinc.

Nevada. - Production of zinc in Nevada in 1946 was the largest in the history of the State, surpassing the previous record of 1945 by 7 percent. Mines in the Pioche district, Lincoln County, produced approximately two-thirds of the 1946 zinc output. All the Pioche zinc was recovered from concentrates produced at the Combined Metals Reduction Co. Pioche mill.

New Mexico. - In New Mexico the mine production of zinc dropped 10 percent to the lowest level since 1940, losing to Arizona the State's position as second largest zinc-producer west of Oklahoma. Approximately 95 percent of all the zinc produced in New Mexico in 1946 came from mines in the Central district, Grant County, and included the Empire Zinc Co. Hanover group, American Smelting & Refining Co. Ground Hog and Hanover Milling Units, Peru Mining Co. Pewabic, Kearny and Copper Flat mines, Black Hawk Consolidated Mining Co. Hobo mine, and the Kennecott Copper Corporation Oswaldo mine. Much of the remainder of the zinc produced in New Mexico in 1946 came from the American Smelting & Refining Magdalena Unit in the Magdalena district, Socorro County, and the Carlisle group of mines in the Steeple Rock district, Grant County.

Texas. - The first zinc concentrates to be marketed from a Texas mine were shipped in 1946 by the Clark Mining Co. from the Bonanza mine in Hudspeth County. This shipment marked the first mine production of zinc in Texas since 1917.

Utah. - The mine output of zinc in Utah slumped 25 percent to the lowest level since 1924. In the West Mountain (Bingham) district, for years the leading sources of zinc in Utah, production declined to less than half that in 1945, permitting the Park City region to advance to first place. The chief cause of the sharp drop in output of the West Mountain (Bingham) district was the five-months' strike at the United States & Lark property of the United States Smelting, Refining & Mining Co., but in spite of this, for the year as a whole, the property remained the State leading zinc producer. The Tooele slag-fuming plant recorded a slight drop from 1945 but remained the second most important source of zinc in the State. Other leading producers of zinc in Utah in 1946 were the New Park mine, the Chief Consolidated mine, the Park Utah Consolidated property, the Calumet mine in the Rush Valley district, the Silver King Coalition mine, and the property of the Pacific Bridge Co. These 8 operations supplied 92 percent of the State total output of zinc.

Washington. - Despite an increased rate of output during the last quarter of 1946, the total zinc production in Washington for the year declined slightly from that in 1945, to 11,650 tons. Of the five major producers, only the Deep Creek mine of the Jamison-Higginbotham Mining Co. in Stevens County increased its tonnage of ore over 1945, but the Pend Oreille Mines & Metals Co. and the American Zinc, Lead & Smelting Co. in the Metaline district recorded increased yields of recoverable metal owing to a greater content of zinc in the ores treated. Output of zinc declined at the properties of the Metaline Mining & Leasing Co. in the Metaline district and the Howe Sound Co. in Chelan County. These five companies produced nearly 99 percent of the State total zinc in 1946.

Mine production of recoverable zinc in the United States in 1946,
by months 1/, in short tons

Region and State	January	February	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Total 1946
Eastern States	13,483	11,338	12,607	12,563	12,773	9,202	7,042	9,055	12,070	13,310	12,301	12,571	138,315
Central States	14,694	13,756	14,680	14,687	14,603	13,601	5,739	14,025	14,097	14,667	13,851	14,100	162,500
Western States:													
Arizona......	4,050	3,850	2,950	1,865	1,970	1,690	3,800	4,550	4,350	4,625	4,300	4,500	42,500
California...	760	525	565	770	720	715	560	530	460	500	500	500	7,105
Colorado.....	2,863	3,131	3,448	2,758	3,055	2,967	2,484	2,680	2,587	2,755	2,590	2,500	33,818
Idaho........	6,350	6,200	6,850	6,000	5,600	5,650	5,150	5,400	5,350	5,675	5,550	5,600	69,375
Montana......	1,100	1,235	1,850	1,250	1,450	1,500	1,140	1,450	1,300	1,200	1,100	1,225	15,800
Nevada.......	1,850	1,980	2,240	2,420	2,590	2,040	1,600	1,700	1,550	1,650	1,700	1,700	23,020
New Mexico...	2,783	2,954	2,653	2,490	2,679	2,554	3,227	3,523	3,150	3,400	3,500	3,450	36,363
Texas........	-	-	-	-	-	-	11	-	19	20	21	20	91
Utah.........	2,475	1,600	1,865	1,770	1,650	1,580	1,900	2,330	2,400	2,550	2,530	2,600	25,250
Washington...	855	960	1,055	975	1,125	1,025	565	650	1,100	1,165	1,050	1,125	11,650
	23,086	22,435	23,476	20,298	20,839	19,721	20,437	22,813	22,266	23,540	22,841	23,220	264,972
Total United States.......	51,263	47,529	50,763	47,548	48,215	42,524	33,218	45,893	48,433	51,517	48,993	49,891	565,787

1/ Revised figures.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

FOR RELEASE January 30, 1947

MINERAL MARKET REPORTS
UNIVERSITY
MMS NO. 1495

LEAD AND ZINC PIGMENTS AND ZINC SALTS IN 1946
(Preliminary Annual Report)

Preliminary data on lead and zinc pigments in 1946 indicate that the industry had to contend with a continuation of the unsatisfactory supply-demand relationship that has prevailed for several years, according to the Bureau of Mines, United States Department of the Interior. Demand for pigments as a whole was at near record levels but shortages of essential crude materials, particularly lead and linseed oil, prevented producers from filling a large segment of requirements. Labor strikes in some of the major pigment consuming industries, notably the automobile industry, prevented an even greater disparity between supply and demand than existed in 1946. Inability to expand titanium pigments production capacity substantially and quickly had a restraining influence on producers' efforts to supply the record needs for this class of pigments which is competitive with those covered by this report. Production of titanium pigments was at virtual capacity level in 1946 but production capacity is being expanded. Sales of paint, varnish and lacquer materials, a chief pigment consuming industry, established a new record in 1946.

Shipments of both white lead varieties, dry and in oil, gained in 1946, the dry grade by 34 percent and the "in oil" class by 6 percent. White lead, however, had been called upon to bear the brunt of the curtailment in use of lead required by the chemicals order, M-384, in operation from the middle of January to mid-December 1945. In 1945 total shipments of white lead (dry and in oil) were smaller by a substantial margin than at any time since considerably before the beginning of the present century. Shipments of basic lead sulfate, that had been classed with white lead (basic carbonate), under order M-384, rose 31 percent in 1946 over 1945, but shipments in the latter year were the smallest since the first figures were published in 1902. Red lead and litharge fell 33 and 6 percent, respectively, as compared with 1945, but the latter had established a new high record in that year and the former had been at record or near-record levels for several years.

Despite Government controls on the consumption of lead, stimulus to production through Government assistance in expediting equipment and supplies to producers, continued release to consumers of metal from Government inventories, and the continued payment of premiums for over-quota production as well as some liberalization of the plan, the lead shortage became more severe as the year progressed. This was owing chiefly to mine and smelter strikes in the first half of the year, to labor shortages throughout the year, and to inadequate development work for several years. Receipts of crude and refined lead from abroad also dropped sharply in 1946.

Shipments of the zinc pigments, zinc oxide (lead-free and leaded) and of lithopone, showed gains in 1946 over 1945 of 21, 5 and 7 percent, respectively. Lead-free zinc oxide shipments had been exceeded only twice before, in the boom years of 1928 and 1929, and leaded zinc oxide shipments had been exceeded only in 1941. Lithopone shipments had been exceeded in 11 earlier years, but were at relatively high

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Prepared by Helena M. Meyer and Alethea W. Mitchell, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

levels nonetheless. Zinc oxide (lead-free) production totaled 139,000 tons in 1946, leaded zinc oxide 69,900, and lithopone 148,300.

Supplies of zinc were abundant as compared with those of lead -- domestic production was less affected by strikes than either copper or lead, and imports of crude and refined zinc compared much more favorably with those for 1945 than either of the other metals. Producers of pigments, however, were not always able to obtain needed metal.

Inadequate supplies of linseed oil, of course, as well as other continuing shortages impeded the manufacturers of paints from both lead and zinc pigments.

Lead chemicals were alternately controlled by the lead order, M-38, and by the new lead chemicals order, L-354. Lead oxides for battery manufacture were under M-38 for all year and this order was revised July 1 to place the battery oxides under complete allocation control. The stringent lead supply situation, as already mentioned, grew worse rather than better as the year progressed and led to more than one cut in percentage allowances for certain uses. Under pressure from all sides to remove all controls, the Government removed controls on the use of lead, effective December 27, 1946. Inventory restrictions were retained. Zinc consumption controls were removed in 1945.

Shipments of zinc chloride, in terms of 50° B. solution, were at virtually the same level in 1946 as in the 2 years immediately preceding. Production amounted to 56,400 tons in 1946. Growing demand for zinc sulfate was reflected in the peak shipments of this product in 1946, 17 percent above the previous peak tonnage for 1945. A new producer of zinc sulfate is in prospect. Production of zinc sulfate totaled 25,000 tons in 1946.

Following the raising of the ceiling price on pig lead, O.P.A. prices for pigments and pastes with a high lead content were increased effective June 7, 1946, the first advance since maximum prices were established by the General Maximum Price Regulation in 1942. The changes represented an average increase over previous maximum prices of 20 percent or about $1\frac{1}{4}$ cents a pound.

Producers raised prices for zinc oxide (lead-free) and leaded zinc oxide above ceilings in June 1946 during the almost month-long interim in the operation of the Office of Price Administration. Ceiling prices at March and June 1942 levels were reestablished at the end of July, and were raised by O.P.A. for the first time on October 14, 1946, from .75 to 1 cent a pound.

All price controls on the products covered by this report were removed by the general order of the President, effective November 10. Immediate price gains were $2\frac{1}{4}$ cents a pound for litharge, white lead and red lead, 1 cent a pound for zinc oxide (lead-free), 1 to 1 3/4 cents a pound for the leaded grades of zinc oxide (depending on lead content) and less than 3/4 cent for lithopone. Further immediate gains of $1\frac{1}{4}$ cents a pound were announced for the lead pigments and of an additional 1 cent for the leaded grades of zinc oxide.

Some lead and zinc pigments and zinc salts sold 1/ by domestic manufacturers in the United States, 1943-46, in short tons

	1943	1944	1945	1946
Basic lead sulfate 2/ or sublimed lead:				
White	4,752	5,253	2,235	5,100
Blue	845	1,080	1,660	
Red lead	53,378	53,972	47,381	31,600
Orange mineral	79	284	230	(3)
Litharge	113,091	138,203	138,798	130,800
White lead:				
Dry	39,525	46,466	27,382	36,600
In oil 4/	36,642	39,260	23,788	25,300
Zinc oxide	143,402	140,675	127,955	154,700
Leaded zinc oxide	43,828	64,395	62,598	66,000
Lithopone	135,723	142,905	136,161	145,600
Zinc chloride, 50°B	53,707	57,545	56,230	57,400
Zinc sulfate	15,649	17,156	20,354	24,300

1/ Designated as shipments in 1945 and 1946. 2/ Exclusive of basic lead sulfate used for the manufacture of leaded zinc oxide which is included in tonnages shown for that pigment. 3/ Estimate included under red lead. 4/ Weight of white lead only.

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For release February 5, 1947.

MINERAL MARKET REPORTS
M. M. S. NO. 1496

LEAD IN 1946
(Preliminary report)

Labor and reconversion problems which burdened the Nation's industrial economy in 1946 adversely affected the domestic lead industry, according to the Bureau of Mines, United States Department of the Interior. The supply of refined lead available for consumption continued to decline despite an advance in price to an unprecedented 12.55 cents per pound at the year's end. Domestic mine production of lead and refinery output from domestic ores and base bullion dropped 15 percent to the lowest levels since 1935 and 1934, respectively. Total output of refined lead at primary refineries fell 23 percent and antimonial lead production decreased 10 percent. Prolonged labor strikes at mines, smelters, and refineries were the chief reason for the declining output, although labor shortages continued to prevent capacity operations at many producing plants. Uncertainty regarding extension of the Office of Price Administration and ceiling prices, the consequent unstable price structure during the month when OPA was inoperative, and the national railroad and coal mine strikes in May were subordinate factors which further retarded domestic lead production. Ceiling prices on virtually all commodities, including lead, were removed in November. Other Government controls of the lead industry which were revoked included removal of import restrictions which had prevented public purchases of foreign lead, the 5-year-old General Preference Order M-38, Lead Chemical Order L-354, and Order L-355 pertaining to use of lead for manufacture of tetraethyl fluid.

Work stoppages in 1946 began in Utah when on January 21 approximately 1,300 workers at the mining and smelting operations of the American Smelting & Refining Co. and the United States Smelting, Refining & Mining Co. went on strike following collapse of negotiations for increased wages. Strike conditions spread rapidly and on February 25 workers in virtually every lead mining, milling, and smelting operation of the American Smelting & Refining Co. joined in the dispute. Lead-zinc mining and milling operations of the Phelps Dodge Corporation at Bisbee, Arizona, were closed by strike on March 20 along with certain of the Corporation's Arizona, Texas, and New York copper mining and metallurgical operations. Virtually all strikes at lead mines, mills, smelters, and refineries were settled by the end of June, although one of short duration occurred at the mines and mills of the St. Joseph Lead Co. in Southeastern Missouri during the last week in October.

A strike in January and February of mine and smelter workers at Mexican properties recovering silver, which included most producers of lead, seriously curtailed Mexican lead output in 1946.

Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Government regulations. - Lead continued under Government control during most of 1946 through provisions of Civilian Production Administration General Preference Order M-38. In operation the Order prohibited use of lead for certain purposes but permitted varying freedom in its consumption in essential uses. Several amendments were issued during the year changing quotas (usually to a lower level) of lead permissible for certain uses. Upon almost unanimous recommendations of the lead producing and consuming industries, the CPA revoked Order M-38 on December 27, thus virtually ending the governmental control of lead which began in October 1941.

Limitation Order L-354, affecting the use of lead in the manufacture of lead chemicals and Order L-355 limiting consumption of lead for tetraethyl lead were operative until their revocation December 27.

Government control on imports of lead as outlined in General Import Order M-63 were eliminated, effective November 18.

The general policy of the Quota Committee pertaining to the Premium Price Plan for overquota mine production of domestic lead, (copper and zinc were also included) prevailed through June but collapsed with the expiration of OPA and ceiling prices on June 30. Upon reestablishment of the OPA, provisions were made for retroactive premium payments to cover the period when no plan was in effect.

Production. - Preliminary estimates of mine production in the United States and Alaska in 1946 indicate an output of 332,478 tons of recoverable lead, a decrease of 15 percent from 1945. Preliminary data based on reports from producers covering eleven months' actual output plus an estimate for December indicate that 355,600 short tons of refined lead and 51,100 tons of antimonial lead were produced at primary refineries in 1946. Total output of refined lead dropped 23 percent and antimonial lead production fell 10 percent compared with the 1945 outputs. It is estimated from incomplete data that 303,000 tons were produced from domestic ores and base bullion, an indicated decline of 15 percent, and the smallest output since 1934.

Table 1. - Refined lead produced at primary refineries in the United States, 1945-1946, in short tons

Year	From domestic ores and base bullion	From foreign ores and base bullion	From scrap	Total
1945	356,535	87,050	18,525	462,110
1946 (preliminary)	1/ 303,000	2/	2/	355,600

1/ Estimate.

2/ Sufficient data not yet available.

The antimonial lead produced in 1946 dropped 10 percent from 1945 and the antimony content declined to 5.9 percent. Although sufficient data to explain the decline in antimony content are not available, the compilation of final statistics on consumption will likely indicate that greater quantities of low-percentage alloys were used in such items as type metal, cable covering, sheet and pipe, and collapsible tubes and foil.

Table 2. - Antimonial lead produced at primary lead refineries in the United States, in 1945 and 1946, in short tons

	Production	Antimony content		Lead content (by difference)			
		Weight	Percent	From domestic ore	From foreign ore	From scrap	Total
1945	56,495	4,148	7.3	7,286	2,695	42,366	52,347
1946 1/	51,100	3,000	5.9	2/	2/	2/	48,100

1/ Preliminary
2/ Data not yet available.

Stocks. - Producers' stocks of refined lead increased 12 percent according to data obtained in the Bureau of Mines preliminary annual survey of primary smelters and refineries. Inventories of antimonial lead (in terms of lead content) declined 3 percent. Government-owned stocks of pig lead within the continental United States, all corroding grade, declined from 6[illegible],700 tons on January 1 to 36,124 tons on December 31, according to information compiled by the Tin-Lead-Zinc Division of the Civilian Production Administration.

Table 3. - Stocks of lead on hand at primary lead refineries in the United States at the end of 1945 and 1946, in short tons

Date	Refined lead	Antimonial lead 1/
December 31, 1945.....................	37,690	6,563
December 31, 1946.....................	42,400	6,346

1/ Lead content.

Consumption. - In 1946 the calculated supply of refined lead made available for shipment from primary refineries to consumers (a close measure of consumption) amounted to approximately 494,146 tons, a 28-percent drop from the comparable figure of 688,647 tons in 1945.

Table 4. - Refined lead available for shipment to consumers, 1945 and 1946, in short tons

	1945	1946 (preliminary)
Supply: Stocks at primary refineries Jan. 1......	16,788	37,690
Government-owned stocks on Jan. 1........	90,454	68,700
Production at primary refineries.........	1/462,110	1/355,600
Imports................................	227,469	3/111,200
Total available.........................	796,821	573,190
Withdrawn:		
Stocks at primary refineries on Dec. 31..	37,690	42,400
Government-owned stocks on Dec. 31.......	68,700	36,124
Exports................................	2/ 1,784	3/ 520
Total withdrawn.........................	108,174	79,044
Apparent shipments to domestic consumers.........	1/688,647	1/494,146

1/ Includes an undetermined tonnage of secondary lead produced from scrap at primary refineries in 1946. The 1945 total amounted to 18,525 tons.
2/ Includes 377 tons of foreign refined lead re-exported.
3/ Estimate based on 11-months' data, January through November, and an estimate for December.

Foreign trade. - During 1946 imports dropped to the lowest level since 1939 and were approximately 49 percent under the tonnage imported in 1945. As in previous years, the greater part of the lead imported was in the form of pigs and bars, about 46 percent of which came from Mexico and the remainder from Canada, Peru, Japan, and Australia. Imports of lead in base bullion, all from Peru, totaled 46 tons. Receipts of lead in ore and matte, principally from Newfoundland, Australia, Canada, Peru, and Argentina, declined 41 percent.

Total exports of pig lead (excluding re-exports of foreign refined lead) in 1946 declined 63 percent from 1945. Virtually half of the lead exported was consigned to Brazil.

Table 5. - Imports and exports of lead in 1945 and 1946, in short tons

Year	Imports			Exports
	Lead in ore and matte	Lead in base bullion	Pigs and bars	Pigs and bars
1945...............	70,005	8	227,469	1,407
1946 1/............	41,200	2/ 46	111,200	520

1/ Estimate based on 11 months' data.
2/ Actual figure for 11 months.

Price. - Announcement by the Office of Price Administration on May 29 of a higher ceiling price for lead, effective June 3, increased the long-established 6.50-cents-per-pound base price of lead, New York, to 8.25 cents. This new price level, although welcomed by the lead-mining industry, was considered by industry spokesmen to be somewhat below that necessary to effect a prompt relief of the prevailing lead shortage. A bill to extend the OPA was vetoed by the President on June 29 and on July 2 the price of lead advanced to 9.50 cents per pound, New York. With the reestablishment of OPA by legislative action on July 25, the former ceiling price of 8.25 cents became effective and prevailed until November 9 when the President announced his decontrol order which included the removal of ceiling prices from all metals. The lead market, freed of price limitations, and stimulated by brisk consumer bidding for a share of the inadequate supply, responded swiftly to decontrol, and on November 11 lead was quoted at 10.50 cents, New York. Following removal of lead import restrictions by the Civilian Production Administration on November 18, the price advanced to 11.80 cents, New York, which raised the market price to the prevailing import basis, plus freight and duty charges. On December 16 domestic producers advanced the price to 12.55 cents, New York, the highest level on record. The previous record high, which prevailed for a brief period in June 1917, was 12.00 cents, New York.

MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

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February 1947

MINERAL MARKET REPORT
M. M. S. No. 1497

BITUMINOUS COAL DISTRIBUTION

COAL YEAR 1945-46

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Prepared by Economic Analysis Section, Coal Economics Division, Economics and Statistics Branch, Bureau of Mines, in cooperation with the Solid Fuels Administration for War.

The following tables, covering the coal year ended March 31, 1946, have been compiled from reports rendered by producers of bituminous coal and lignite for each mine producing an average of 50 tons or more per day, or mines having direct rail or river shipping facilities regardless of tonnage produced, dock operators, and transshippers of coal moving via the Great Lakes and tidewater, pursuant to Solid Fuels Administration for War Order No. 3 and Amendments Nos. 1, 2, and 3 thereto. Under that order, producers file monthly reports on Form S.F.A. No. 38 for bituminous coal and Form S.F.A. No 56 (North Dakota, South Dakota, and Texas) for lignite, showing production and distribution of coal from each mine producing an average of 50 tons per day or more, or having direct rail or river shipping facilities, regardless of tonnage produced, identified by States and market areas of destination, uses, sizes, and methods of movement. Dock operators file similar distribution information monthly on Form S.F.A. No. 48 with respect to coal shipped from the docks. All persons ordering or directing the transshipment of coal at Lake or tidewater dumping piers file cargo manifests, invoices, summary reports, or other documents covering the movement of coal from the port of dumping to the port of receipt.

The data submitted in these tables have been abstracted from mechanical tabulations of the reports that have been rendered by the parties described and include such tonnages as were reported at the time the tabulations were closed. They have a coverage representing 93.4 percent of the total production. Production and distribution data not accounted for in the tables originate at mines with an average of less than 50 tons daily production, which have no direct rail or river shipping facilities, and from which reports are not required, together with tonnages from certain large mines and docks delinquent in filing.

It will be noted that certain tonnages described as "unknown" and "not reported" appear throughout the tables. These items represent the accumulation of tonnages for which respondents failed to report pertinent information such as district of origin, State of destination, size group, and use; replies to correspondence requesting such information had not been received at the time the tabulations were prepared.

Tonnages are shown in net tons of 2,000 pounds.

TABLE 1. - DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38, 48, AND 56, AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

In this table are shown (a) the total production for each producing district as reported on Forms S.F.A. Nos. 38 and 56, and (b) the total shipments to consumers, distributed by States of destination and uses. Destinations are not shown for railroad fuel. Only for byproduct and beehive coke oven and smithing use are destinations reported for truck shipments. The truck tonnages for which destinations were reported are included in the all-rail, river and ex-river data for statistical convenience.

Shipments from each producing district to State of destination and for each use therein are shown for coal moving all-rail, river, and ex-river for all uses except railroad fuel and in the case of coal for coking purposes and for smithing use, for all movements except Lake and tidewater. Following a subtotal of these tonnages, there are shown by producing districts the tonnages of railroad fuel shipments, tidewater and Lake shipments, shipments by truck, shipments to such distributors and wholesalers who failed to furnish information as to the final destination and use, shipments by private railroads, tramways and conveyors, tonnages of coal used in and around the mines (including coal used to produce coal, coal used by mine employees, and coal made into briquets or packaged fuel), other disposals by methods not specifically outlined, net change in mine inventories, and the total production reported.

Item 13 has the estimated residual part of truck production, the product of mines which are not required to report on Forms S.F.A. Nos. 38 and 56, for the year ended March 31, 1946. These estimates are based on the total production of truck mines during 1945. They represent approximate activity of this class of mine during the year ended March 31, 1946. The estimates represent total truck tonnages for 1945 less (a) tonnages included in rail, river, and ex-river movement for shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use, and (b) truck tonnage shown in Item 7.

In order to show the total coal distribution by States of destination by all movements, and by consumer uses, there has been included in this table a summary by States of destinations and uses of waterborne coal moving to consumers via the Great Lakes and tidewater. These data exclude shipments to storage docks that have not been reported as being transshipped to a consumer. As explained in the footnote to this section of the table, the tonnages shown represent the distribution of coal to consumers during the period reported that moved from the mines by Lakes and tidewater. In the final column are shown the tonnages of total shipments by all movements and for all uses. •In comparing the grand total distribution arrived at in the last column with the grand total of the distribution and production from the mines, it is pointed out that the total distribution of total production reported on Forms S.F.A. Nos. 38 and 56 covers shipments to Lake and tidewater as reported by producers and includes coal in transit to and at the dumping piers, that delivered to storage docks, and coal moving inland to storage piles, while the grand total distribution includes shipments made to consumers during the period. During the year ended March 31, 1946 producers reported shipping to the Great Lakes 51,741,901 tons, while dock operators and transshippers moved to consumers total shipments of 54,581,056 tons. To tidewater, producers reported shipments of 43,718,990 and dock operators and transshippers reported moving to consumers only 43,489,608. A summarization of waterborne shipments via Lake and tidewater during this year shows there were moved to consumers 2,609,773 tons more than were moved to the dumping piers by producers, hence the difference in totals.

Certain transshippers are delinquent in filing data required, particularly with respect to movements of coal for account of Canadian distributors who themselves arrange for transshipment. The total reported shipments of bituminous coal to Canada during the year ended March 31, 1946 including railroad fuel, was 20,993,584 tons and accounts for 92.1 percent of the grand total shipments to Canada. Reported shipments of railroad fuel to Canada are included in Item 4, "Railroad Fuel."

Detail breakdowns of the Lake and tidewater shipments are shown in Tables 2 and 3.

TABLE 2. - SHIPMENTS OF BITUMINOUS COAL VIA TIDEWATER TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE.

This table provides the distribution of tidewater interport shipments to alongside consumers, by district of origin, State of destination, and use within the State. There are also shown the tonnages of coal moving off the commercial tidewater docks, by State of destination and by use. It is not possible, as a rule, to secure the district of origin on these ex-dock coals, and, therefore, they are shown only in total. The data represent the distribution of coal that moved from the mines via tidewater during the coal year to the State of consumption and by uses.

Following the detailed State analyses are the tonnages that moved for railroad fuel, bunker fuel, and export overseas, by district of origin, for alongside purchasers and total shipments ex-dock.

TABLE 3. - SHIPMENTS OF BITUMINOUS COAL VIA THE GREAT LAKES TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE.

Here is listed the distribution of Great Lakes interport shipments to alongside consumers, by district or origin, State of destination, and use. There are also shown the tonnages of coal moving off the Upper Lakes commercial docks, by State of destination and use. As in the case of shipments from the tidewater docks, it is not possible, as a rule, to secure the district of origin on the ex-dock coals, and, therefore, they are shown in total only. The data represent the distribution of coal that moved from the mines via the Great Lakes during the year ended March 31, 1946 to the State of consumption and by uses.

Following the detailed State analyses and the United States total are the tonnages that move to Canada. The total reported interport movement for storage or consignment is shown for the reason that Canadian dock operators are not required and do not file reports of ex-dock shipments from commercial docks.

To complete the analysis of the total reported shipments, railroad and Lake vessel fuels are shown.

TABLE 4. - SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, USE, CONSOLIDATED SIZE GROUP, AND METHOD OF MOVEMENT, AS REPORTED ON FORMS S.F.A. NOS. 38, 48, AND 56, AND CARGO MANIFESTS, INVOICES, AND SUMMARY REPORTS.

For each producing district, there are indicated the total reported shipments and transshipments, by consolidated size groups, methods of movement, and consumer uses. Due to the fact that the district of origin of shipments off the docks on the Upper Lakes and Seaboard are not ascertainable, these tonnages are shown in total only for the Great Lakes and tidewater groups.

The five basic size groups for all movements and uses except the Great Lakes and tidewater ex-dock shipments are identical to those described below as being applicable in Table 6. In the case of Lake and tidewater ex-dock shipments, block, lump, egg, and stove sizes are included in Group 1; nut, pea, and stoker (including all coal shipped from the mine as stoker as well as dock-made stoker sizes) in Group 2; run of pile (including all coal except screenings and stoker which are loaded without rescreening) in Group 3; and screenings (including all resultants from screenings on the docks as well as screenings shipped as such from the mines) in Group 4. With no break reported as to sizes of screenings shipped ex-dock, the total tonnage of all screenings is reported in Group 4.

Consumer uses (other than byproduct and beehive coke oven coal trucked away from the producing mine, and smithing) are not reported for truck shipments or other disposals not specified, and, therefore, are shown only in total for the district. Coal used at the mines and the net changes in inventories are also shown in total in order to complete the analysis of the total tonnage reported by district of origin.

TABLE 5. - RECAPITULATION OF THE DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56, BY DISTRICT OF ORIGIN, METHOD OF MOVEMENT, AND/OR USE.

This table includes the summaries of the tonnages for each producing district by methods of movements and by uses as reported by the producers. The ratio of the coverage of the total for each district as compared with the production (final for the last nine months of 1945 as reported in Table No. 4 of M.M.S. No. 1468 dated November 19, 1946 and preliminary for January through March 1946 as reported in Weekly Coal Report No. 1504 of May 18, 1946)is also shown at the foot of the table.

TABLE 6. - PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED MARCH 31, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56.

This table shows for each producing district the total tonnages broken down by five basic size groupings as described in the captions of Columns 1 through 5 of the table, by truck mines, for railroad fuel and all other movements and uses as reported on Forms S.F.A. Nos. 38 and 56. These basic groups of sizes with the exception of sizes 1 and 2 in District 3 follows the general descriptions of the size groups for District No. 1 as set forth in the minimum and maximum price schedules for that district. In District 3 size group 1 includes "lump coal and double screened coal with a bottom size larger than 2". Size group 2 includes "lump and double screened coal with a bottom size 2" and smaller." In the case of basic group 3, domestic mine run, and screened and altered mine run, were included as these descriptions are used in other districts. These added grades of coal, however, do not include any sizes outside the descriptions for Size Group 3 in District No. 1. In basic groups 4 and 5, the only changes made from District 1 descriptions were the inclusion in each group of dedusted screenings which appear in the size group descriptions of certain districts.

In consolidating the size groups for all districts under the five basic groups described in the table, it was found that in some districts the maximum top and bottom size of certain size groups overlapped. In some instances, where the preponderant sizes of the size groups which overlapped were known, it was possible to determine the basic group within which most of the tonnage would fall. In certain instances of overlapping size groups where there was more than one such size which overlapped, the size group was included in the basic group on the basis of the maximum top size.

The sizes shown are those as reported on Forms S.F.A. Nos. 38 and 56 and are the sizes as shipped from the mines.

* * * * *

This publication was prepared by Joseph J. Gallagher and Columbus R. Gentile working under the general direction of Glen L. Parker. The editing of reports filed by producers, transshippers and dock operators and the preparation of basic statistical data was directed by Walter T. Kuzara and Florace C. Scalf under the direct supervision of Mark D. Miller. The analysis for the Bureau was made under the general supervision of W. B. Reed, Acting Chief, Economic Analysis Section, and T. W. Hunter, Chief, Coal Economics Division.

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38, 48 AND 56 AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS.

(In Net Tons of 2,000 Pounds)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. All-Rail, River and Ex-river 1/ (Excluding Railroad Fuel)															
New England															
Connecticut Total	653,981	60,849	267,390	187	-	-	40,021	46,540	-	-	-	-	-	-	-
Industrial	508,450	34,314	183,533	-	-	-	10,973	17,152	-	-	-	-	-	-	-
Retail Yards	142,438	6,216	83,698	187	-	-	24,661	26,608	-	-	-	-	-	-	-
Byproduct and Water Gas	-	20,319	-	-	-	-	4,387	2,232	-	-	-	-	-	-	-
Smithing	3,093	-	-	-	-	-	-		-	-	-	-	-	-	-
Storage	-	-	159	-	-	-	-	548	-	-	-	-	-	-	-
Maine Total	46,215	7,713	73,456	54	-	-	54,603	29,956	-	-	-	-	-	-	-
Industrial	23,086	48	46,265	-	-	-	37,423	23,956	-	-	-	-	-	-	-
Retail Yards	22,417	6,115	27,191	54	-	-	17,180	5,565	-	-	-	-	-	-	-
Byproduct and Water Gas	-	1,550	-	-	-	-	-	435	-	-	-	-	-	-	-
Smithing	712	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts Total	1,551,297	126,012	544,035	189	-	240	244,136	232,230	-	-	-	-	-	-	-
Industrial	1,255,944	78,189	335,828	-	-	-	29,551	112,754	-	-	-	-	-	-	-
Retail Yards	291,512	29,239	150,356	189	-	240	208,599	80,941	-	-	-	-	-	-	-
Byproduct and Water Gas	-	18,584	3,737	-	-	-	506	34,761	-	-	-	-	-	-	-
Smithing	3,841	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	54,114	-	-	-	5,480	3,774	-	-	-	-	-	-	-
New Hampshire Total	227,427	28,002	87,364	-	-	53	10,666	8,935	-	-	-	-	-	-	-
Industrial	166,968	23,244	43,046	-	-	53	732	4,282	-	-	-	-	-	-	-
Retail Yards	60,411	3,631	44,318	-	-	-	9,934	3,483	-	-	-	-	-	-	-
Byproduct and Water Gas	-	1,127	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-	1,170	-	-	-	-	-	-	-
Rhode Island Total	40,702	5,196	47,220	61	-	-	36,023	21,729	-	-	-	-	-	-	-
Industrial	34,226	5,072	3,433	-	-	-	20,516	12,735	-	-	-	-	-	-	-
Retail Yards	6,365	124	39,908	61	-	-	11,350	5,264	-	-	-	-	-	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	111	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	3,879	-	-	-	4,157	3,730	-	-	-	-	-	-	-
Vermont Total	182,857	17,372	94,184	-	-	1,699	2,398	23,137	-	-	-	-	-	-	-
Industrial	140,288	7,121	67,277	-	-	1,699	-	20,863	-	-	-	-	-	-	-
Retail Yards	42,231	1,302	26,907	-	-	-	2,398	2,274	-	-	-	-	-	-	-
Byproduct and Water Gas	-	8,949	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38, 48 AND 56 AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

(In Net Tons of 2,000 Pounds)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A. Nos. 38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
1. All-Rail, River and Ex-River 1/ (Excluding Railroad Fuel)													
New England													
Connecticut Total	-	-	-	-	-	-	-	-	1,068,968	-	3,107,997	3,107,997	4,176,965
Industrial	-	-	-	-	-	-	-	-	754,422	-	1,984,383	1,984,383	2,738,805
Retail Yards	-	-	-	-	-	-	-	-	283,808	-	468,032	468,032	751,840
Byproduct and Water Gas	-	-	-	-	-	-	-	-	26,938	-	655,582	655,582	682,520
Smithing	-	-	-	-	-	-	-	-	3,093	-	-	-	3,093
Storage	-	-	-	-	-	-	-	-	707	-	-	-	707
Maine Total	-	-	-	-	-	-	-	-	211,997	-	1,260,296	1,260,296	1,472,293
Industrial	-	-	-	-	-	-	-	-	130,778	-	876,412	876,412	1,007,190
Retail Yards	-	-	-	-	-	-	-	-	78,522	-	378,368	378,368	456,890
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,985	-	5,271	5,271	7,256
Smithing	-	-	-	-	-	-	-	-	712	-	245	245	957
Massachusetts Total	-	-	-	-	-	-	-	-	2,698,139	-	6,739,421	6,739,421	9,437,560
Industrial	-	-	-	-	-	-	-	-	1,812,266	-	3,030,749	3,030,749	4,843,015
Retail Yards	-	-	-	-	-	-	-	-	761,076	-	1,921,714	1,921,714	2,682,790
Byproduct and Water Gas	-	-	-	-	-	-	-	-	57,588	-	1,786,958	1,786,958	1,844,546
Smithing	-	-	-	-	-	-	-	-	3,841	-	-	-	3,841
Storage	-	-	-	-	-	-	-	-	63,368	-	-	-	63,368
New Hampshire Total	-	-	-	-	-	-	-	-	362,447	-	400,939	400,939	763,386
Industrial	-	-	-	-	-	-	-	-	238,325	-	260,240	260,240	498,565
Retail Yards	-	-	-	-	-	-	-	-	121,777	-	139,421	139,421	261,198
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,127	-	1,278	1,278	2,405
Smithing	-	-	-	-	-	-	-	-	48	-	-	-	48
Storage	-	-	-	-	-	-	-	-	1,170	-	-	-	1,170
Rhode Island Total	-	-	-	-	-	-	-	-	150,931	-	1,413,474	1,413,474	1,564,405
Industrial	-	-	-	-	-	-	-	-	75,982	-	325,317	325,317	401,299
Retail Yards	-	-	-	-	-	-	-	-	63,072	-	711,916	711,916	774,988
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	376,241	376,241	376,241
Smithing	-	-	-	-	-	-	-	-	111	-	-	-	111
Storage	-	-	-	-	-	-	-	-	11,766	-	-	-	11,766
Vermont Total	-	-	-	-	-	-	-	-	321,647	-	30,106	30,106	351,753
Industrial	-	-	-	-	-	-	-	-	237,248	-	29,709	29,709	266,957
Retail Yards	-	-	-	-	-	-	-	-	75,112	-	397	397	75,509
Byproduct and Water Gas	-	-	-	-	-	-	-	-	8,949	-	-	-	8,949
Smithing	-	-	-	-	-	-	-	-	338	-	-	-	338

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Middle Atlantic															
New Jersey Total	2,711,841	446,619	1,563,206	324	-	11,567	157,397	140,817	-	-	-	-	-	-	-
Industrial	2,428,118	390,661	1,250,868	-	-	3,759	68,037	73,881	-	-	-	-	-	-	-
Retail Yards	281,514	37,211	292,525	324	-	7,808	88,679	8,521	-	-	-	-	-	-	-
Byproduct and Water Gas	-	18,747	19,813	-	-	-	681	54,182	-	-	-	-	-	-	-
Smithing	2,209	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-	4,233	-	-	-	-	-	-	-
New York Total	6,795,437	4,378,975	3,832,438	218,437	-	178,261	99,881	29,270	-	-	-	-	-	-	-
Industrial	5,184,763	1,899,960	2,350,372	147,259	-	156,674	51,732	18,289	-	-	-	-	-	-	-
Retail Yards	661,067	299,781	445,546	71,178	-	21,587	46,008	5,890	-	-	-	-	-	-	-
Byproduct and Water Gas	944,886	2,179,234	1,036,520	-	-	-	1,864	5,091	-	-	-	-	-	-	-
Smithing	4,721	-	-	-	-	-	277	-	-	-	-	-	-	-	-
Pennsylvania Total	8,123,115	30,628,022	5,037,822	174,402	-	95,112	283,001	531,757	-	-	-	-	-	-	-
Industrial	4,957,194	7,677,794	2,809,060	109,435	-	57,458	24,301	211,104	-	-	-	-	-	-	-
Retail Yards	462,226	1,589,623	275,427	64,967	-	37,654	78,510	57,948	-	-	-	-	-	-	-
Byproduct and Water Gas 3/	2,689,698	21,360,198	1,952,959	-	-	-	179,905	261,825	-	-	-	-	-	-	-
Smithing	6,197	407	376	-	-	-	285	880	-	-	-	-	-	-	-
Storage	7,800	-	-	-	-	-	-	-	-	-	-	-	-	-	-
East North Central															
Illinois Total	32,667	18,825	48,331	10,847	-	-	4,741,812	3,231,641	1,193,873	25,628,018	3,512,398	-	-	42,732	606
Industrial	6,456	5,113	16,547	3,675	-	-	62,655	213,186	346,128	17,909,300	2,252,834	-	-	1,904	558
Retail Yards	21,951	148	31,784	7,172	-	-	3,596,973	1,902,367	847,745	7,466,818	1,203,397	-	-	40,828	48
Byproduct and Water Gas	-	13,564	-	-	-	-	1,078,210	1,116,088	-	251,900	56,167	-	-	-	-
Smithing	4,260	-	-	-	-	-	3,974	-	-	-	-	-	-	-	-
Indiana Total	2,760	76,642	57,348	101,891	-	-	2,912,401	7,711,924	527,864	2,011,471	8,190,181	-	1,517	-	-
Industrial	450	4,372	25,965	54,582	-	-	33,767	1,394,163	309,091	1,777,245	6,602,675	-	1,469	-	-
Retail Yards	157	-	31,383	47,309	-	-	893,568	3,463,271	218,773	234,226	1,587,444	-	-	-	-
Byproduct and Water Gas	-	72,230	-	-	-	-	1,984,003	2,854,433	-	-	62	-	-	-	-
Smithing	2,153	40	-	-	-	-	1,063	57	-	-	-	-	48	-	-
Michigan Total	77,559	415,307	238,812	1,272,398	40,413	92	3,396,489	8,511,099	78,799	466,968	113,194	-	-	-	-
Industrial	69,951	331,271	118,746	838,885	16,550	92	67,719	4,729,166	16,735	205,179	56,915	-	-	-	-
Retail Yards	6,331	12,026	120,066	421,326	23,863	-	3,173,495	3,599,325	62,064	261,789	56,279	-	-	-	-
Byproduct and Water Gas	-	72,010	-	12,187	-	-	153,992	182,608	-	-	-	-	-	-	-
Smithing	1,277	-	-	-	-	-	1,283	-	-	-	-	-	-	-	-
Ohio Total	266,317	7,435,961	3,246,989	10,745,592	-	758,491	5,815,465	15,476,052	48,903	629	39,311	-	-	-	-
Industrial	43,307	2,140,822	2,243,629	8,875,186	-	703,008	251,925	6,436,605	32,089	252	28,326	-	-	-	-
Retail Yards	11,822	456,190	820,196	1,870,406	-	55,483	2,533,588	5,687,060	16,814	377	10,985	-	-	-	-
Byproduct and Water Gas	206,209	4,827,448	183,164	-	-	-	3,026,181	3,225,713	-	-	-	-	-	-	-
Smithing	4,979	41	-	-	-	-	3,771	117	-	-	-	-	-	-	-
Storage	-	11,460	-	-	-	-	-	126,557	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Middle Atlantic													
New Jersey Total	-	-	-	-	-	-	-	-	5,031,771	-	4,797,203	4,797,203	9,828,974
Industrial	-	-	-	-	-	-	-	-	4,215,324	-	3,181,259	3,181,259	7,396,583
Retail Yards	-	-	-	-	-	-	-	-	716,582	-	-	-	716,582
Byproduct and Water Gas	-	-	-	-	-	-	-	-	93,423	-	1,615,944	1,615,944	1,709,367
Smithing	-	-	-	-	-	-	-	-	2,209	-	-	-	2,209
Storage	-	-	-	-	-	-	-	-	4,233	-	-	-	4,233
New York Total	-	-	-	-	-	-	-	-	15,532,699	3,199,794	9,889,825	13,089,619	28,622,318
Industrial	-	-	-	-	-	-	-	-	9,809,049	1,276,091	7,134,834	8,410,925	18,219,974
Retail Yards	-	-	-	-	-	-	-	-	1,551,057	36,113	1,133,467	1,169,580	2,720,637
Byproduct and Water Gas	-	-	-	-	-	-	-	-	4,167,595	1,887,590	1,621,524	3,509,114	7,676,709
Smithing	-	-	-	-	-	-	-	-	4,998	-	-	-	4,998
Pennsylvania Total	-	-	-	-	-	-	-	-	44,873,231	222,654	2,532,077	2,754,731	47,627,962
Industrial	-	-	-	-	-	-	-	-	15,846,346	-	1,973,497	1,973,497	17,819,843
Retail Yards	-	-	-	-	-	-	-	-	2,566,355	-	-	-	2,566,355
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	26,444,585	222,654	558,580	781,234	27,225,819
Smithing	-	-	-	-	-	-	-	-	8,145	-	-	-	8,145
Storage	-	-	-	-	-	-	-	-	7,800	-	-	-	7,800
East North Central													
Illinois Total	-	-	-	-	-	-	-	-	38,461,750	1,900,094	-	1,900,094	40,361,844
Industrial	-	-	-	-	-	-	-	-	20,818,356	54,218	-	54,218	20,872,574
Retail Yards	-	-	-	-	-	-	-	-	15,119,231	108,515	-	108,515	15,227,746
Byproduct and Water Gas	-	-	-	-	-	-	-	-	2,515,929	1,737,315	-	1,737,315	4,253,244
Smithing	-	-	-	-	-	-	-	-	8,234	46	-	46	8,280
Indiana Total	-	-	-	-	-	-	-	-	21,593,999	4,326,655	-	4,326,655	25,920,654
Industrial	-	-	-	-	-	-	-	-	10,203,779	-	-	-	10,203,779
Retail Yards	-	-	-	-	-	-	-	-	6,476,131	-	-	-	6,476,131
Byproduct and Water Gas	-	-	-	-	-	-	-	-	4,910,728	4,326,655	-	4,326,655	9,237,383
Smithing	-	-	-	-	-	-	-	-	3,361	-	-	-	3,361
Michigan Total	-	-	-	-	-	-	-	-	14,611,130	11,680,298	-	11,680,298	26,291,428
Industrial	-	-	-	-	-	-	-	-	6,451,209	7,122,500	-	7,122,500	13,573,709
Retail Yards	-	-	-	-	-	-	-	-	7,736,564	1,267,560	-	1,267,560	9,004,124
Byproduct and Water Gas	-	-	-	-	-	-	-	-	420,797	3,288,473	-	3,288,473	3,709,270
Smithing	-	-	-	-	-	-	-	-	2,560	1,765	-	1,765	4,325
Ohio Total	-	-	-	-	-	-	-	-	43,833,710	453,528	-	453,528	44,287,238
Industrial	-	-	-	-	-	-	-	-	20,755,149	-	-	-	20,755,149
Retail Yards	-	-	-	-	-	-	-	-	11,462,921	714	-	714	11,463,635
Byproduct and Water Gas	-	-	-	-	-	-	-	-	11,468,715	452,814	-	452,814	11,921,529
Smithing	-	-	-	-	-	-	-	-	8,908	-	-	-	8,908
Storage	-	-	-	-	-	-	-	-	138,017	-	-	-	138,017

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wisconsin Total	1,668	410	20,075	6,930	–	–	573,988	218,529	271,878	2,191,701	883,722	–	–	191	–
Industrial	55	410	11,513	4,756	–	–	4,995	7,087	211,214	1,614,089	788,070	–	–	–	–
Retail Yards	–	–	8,562	2,174	–	–	568,762	176,671	60,664	577,612	67,663	–	–	191	–
Byproduct and Water Gas	–	–	–	–	–	–	–	34,771	–	–	27,989	–	–	–	–
Smithing	1,613	–	–	–	–	–	231	–	–	–	–	–	–	–	–
West North Central															
Iowa Total	2,060	–	11,416	1,716	–	–	53,781	741,081	341,854	4,398,626	651,189	698,432	–	130,443	341,350
Industrial	–	–	381	–	–	–	762	1,428	64,794	1,978,581	332,246	578,918	–	28,188	93,673
Retail Yards	–	–	11,035	1,716	–	–	50,893	694,445	277,060	2,418,804	318,943	119,414	–	102,255	247,677
Byproduct and Water Gas	–	–	–	–	–	–	1,800	45,208	–	1,241	–	100	–	–	–
Smithing	2,060	–	–	–	–	–	326	–	–	–	–	–	–	–	–
Kansas Total	1,363	–	–	–	–	–	–	55	–	66,583	491	50	43	201,645	1,432,941
Industrial	–	–	–	–	–	–	–	55	–	17,085	491	–	–	58,964	843,585
Retail Yards	–	–	–	–	–	–	–	–	–	49,498	–	50	–	142,681	589,356
Smithing	1,363	–	–	–	–	–	–	–	–	–	–	–	43	–	–
Minnesota Total	5,130	–	1,803	971	–	–	87,348	54,943	93,028	1,261,586	159,018	231	–	63,612	5,218
Industrial	–	–	–	–	–	–	260	2,349	45,135	949,113	142,137	84	–	7,516	3,646
Retail Yards	–	–	1,803	971	–	–	86,997	52,594	47,893	312,473	16,881	147	–	56,096	1,572
Byproduct and Water Gas	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Smithing	5,130	–	–	–	–	–	91	–	–	–	–	–	–	–	–
Missouri Total	24,071	–	972	–	–	–	404,087	364,510	70,975	3,902,597	8,412	6,559	3,269	627,345	2,254,714
Industrial	2,761	–	972	–	–	–	709	19,979	61,421	1,787,502	4,847	–	291	23,842	1,180,813
Retail Yards	14,581	–	–	–	–	–	277,678	114,937	9,554	2,115,095	3,565	6,559	1,846	603,503	1,073,901
Byproduct and Water Gas	–	–	–	–	–	–	125,555	229,594	–	–	–	–	–	–	–
Smithing	6,729	–	–	–	–	–	145	–	–	–	–	–	1,132	–	–
Nebraska Total	1,345	–	–	–	–	–	786	2,208	12,790	198,853	7,000	–	–	201,165	872,571
Industrial	–	–	–	–	–	–	–	–	4,736	51,278	–	–	–	2,236	485,883
Retail Yards	–	–	–	–	–	–	786	2,208	8,054	147,575	7,000	–	–	198,929	386,688
Smithing	1,345	–	–	–	–	–	–	–	–	–	–	–	–	–	–
North Dakota Total	582	–	–	–	–	–	–	–	383	450	–	–	–	–	–
Industrial	–	–	–	–	–	–	–	–	71	53	–	–	–	–	–
Retail Yards	–	–	–	–	–	–	–	–	312	397	–	–	–	–	–
Smithing	582	–	–	–	–	–	–	–	–	–	–	–	–	–	–
South Dakota Total	923	–	–	–	–	–	6,081	3,243	14,208	132,226	3,277	–	–	30,564	16,681
Industrial	–	–	–	–	–	–	–	–	8,811	83,948	2,976	–	–	357	8,681
Retail Yards	–	–	–	–	–	–	6,081	1,694	5,397	48,278	301	–	–	30,207	8,000
Byproduct and Water Gas	–	–	–	–	–	–	–	1,549	–	–	–	–	–	–	–
Smithing	923	–	–	–	–	–	–	–	–	–	–	–	–	–	–

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Wisconsin Total	-	-	-	-	-	-	-	-	4,169,092	8,757,998	-	8,757,998	12,927,090
Industrial	-	-	-	-	-	-	-	-	2,642,189	3,365,672	-	3,365,672	6,007,861
Retail Yards	-	-	-	-	-	-	-	-	1,462,299	3,643,852	-	3,643,852	5,106,151
Byproduct and Water Gas	-	-	-	-	-	-	-	-	62,760	1,748,174	-	1,748,174	1,810,934
Smithing	-	-	-	-	-	-	-	-	1,844	300	-	300	2,144
West North Central													
Iowa Total	244	24,376	-	24,872	149	-	470	-	7,422,059	94,907	-	94,907	7,516,966
Industrial	-	-	-	49	-	-	-	-	3,079,020	667	-	667	3,079,687
Retail Yards	244	24,376	-	24,823	149	-	470	-	4,292,304	94,233	-	94,233	4,386,537
Byproduct and Water Gas	-	-	-	-	-	-	-	-	48,349	-	-	-	48,349
Smithing	-	-	-	-	-	-	-	-	2,386	7	-	7	2,393
Kansas Total	1,208	199,003	-	15,389	7,815	-	-	-	1,926,586	-	-	-	1,926,586
Industrial	-	242	-	3,040	83	-	-	-	923,545	-	-	-	923,545
Retail Yards	1,208	198,713	-	12,349	7,732	-	-	-	1,001,587	-	-	-	1,001,587
Smithing	-	48	-	-	-	-	-	-	1,454	-	-	-	1,454
Minnesota Total	-	941	-	4,459	-	147,977	10,139	-	1,896,404	3,893,773	-	3,893,773	5,790,177
Industrial	-	-	-	1,114	-	91,361	-	-	1,242,715	1,355,129	-	1,355,129	2,597,844
Retail Yards	-	941	-	3,345	-	56,616	10,139	-	648,468	2,099,581	-	2,099,581	2,748,049
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	437,340	-	437,340	437,340
Smithing	-	-	-	-	-	-	-	-	5,221	1,723	-	1,723	6,944
Missouri Total	-	236	-	3,264	-	-	-	-	7,671,011	-	-	-	7,671,011
Industrial	-	-	-	-	-	-	-	-	3,083,137	-	-	-	3,083,137
Retail Yards	-	236	-	3,264	-	-	-	-	4,224,719	-	-	-	4,224,719
Byproduct and Water Gas	-	-	-	-	-	-	-	-	355,149	-	-	-	355,149
Smithing	-	-	-	-	-	-	-	-	8,006	-	-	-	8,006
Nebraska Total	4,386	479,459	-	297,206	26,138	-	-	-	2,103,907	9,444	-	9,444	2,113,351
Industrial	89	12,480	-	154,231	508	-	-	-	711,441	-	-	-	711,441
Retail Yards	4,297	466,979	-	142,975	25,630	-	-	-	1,391,121	9,444	-	9,444	1,400,565
Smithing	-	-	-	-	-	-	-	-	1,345	-	-	-	1,345
North Dakota Total	-	121	-	52,423	-	1,701,565	34,466	-	1,789,990	212,640	-	212,640	2,002,630
Industrial	-	-	-	8,095	-	799,042	263	-	807,524	40,423	-	40,423	847,947
Retail Yards	-	121	-	44,328	-	902,523	34,203	-	981,884	172,134	-	172,134	1,154,018
Smithing	-	-	-	-	-	-	-	-	582	83	-	83	665
South Dakota Total	87	61,671	-	141,430	10,279	122,090	73,512	-	616,272	346,941	-	346,941	963,213
Industrial	-	2,305	-	89,629	-	95,982	29,922	-	322,611	13,458	-	13,458	336,069
Retail Yards	87	59,366	-	51,801	10,279	26,108	43,590	-	291,189	333,447	-	333,447	624,636
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,549	-	-	-	1,549
Smithing	-	-	-	-	-	-	-	-	923	36	-	36	959

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
South Atlantic															
Delaware Total	208,617	33,621	111,677	98	-	239	14,239	4,294	-	-	-	-	-	-	-
Industrial	186,024	31,270	93,940	-	-	239	12,257	4,242	-	-	-	-	-	-	-
Retail Yards	22,593	998	17,737	98	-	-	1,982	52	-	-	-	-	-	-	-
Byproduct and Water Gas	-	1,353	-	-	-	-	-	-	-	-	-	-	-	-	-
District of Columbia Total	232,376	5,344	41,967	204	-	289	1,491,511	34,527	-	-	-	-	-	-	-
Industrial	214,798	5,154	23,864	-	-	289	1,024,016	14,231	-	-	-	-	-	-	-
Retail Yards	17,578	190	18,103	204	-	-	467,495	13,049	-	-	-	-	-	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	7,247	-	-	-	-	-	-	-
Florida Total	-	-	-	-	-	-	2,908	154,902	313,275	6,871	-	-	182,520	-	-
Industrial	-	-	-	-	-	-	46	76,663	205,861	3,390	-	-	156,262	-	-
Retail Yards	-	-	-	-	-	-	2,480	57,986	107,414	3,481	-	-	25,359	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	20,253	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	382	-	-	-	-	-	899	-	-
Georgia Total	-	-	-	-	-	48	9,826	2,529,409	52,413	-	-	-	369,297	-	-
Industrial	-	-	-	-	-	48	9,006	1,224,817	8,257	-	-	-	271,961	-	-
Retail Yards	-	-	-	-	-	-	718	1,286,483	44,156	-	-	-	95,161	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	18,109	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	102	-	-	-	-	-	2,175	-	-
Maryland Total	1,447,556	124,170	2,680,553	99	-	21,224	454,289	97,539	-	-	-	-	-	-	-
Industrial	1,216,436	77,458	974,679	-	-	8,935	143,983	85,547	-	-	-	-	-	-	-
Retail Yards	224,413	20,588	245,718	99	-	12,289	211,581	11,427	-	-	-	-	-	-	-
Byproduct and Water Gas	5,455	26,124	1,460,156	-	-	-	98,673	565	-	-	-	-	-	-	-
Smithing	1,252	-	-	-	-	-	52	-	-	-	-	-	-	-	-
North Carolina Total	-	-	265	-	-	-	1,423,538	4,522,921	1,942	-	-	-	5,817	-	-
Industrial	-	-	105	-	-	-	1,064,173	2,629,178	1,625	-	-	-	5,635	-	-
Retail Yards	-	-	160	-	-	-	358,068	1,789,122	317	-	-	-	182	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	104,621	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	1,297	-	-	-	-	-	-	-	-
South Carolina Total	-	-	-	-	-	-	306,863	2,354,457	280	-	-	-	85,068	-	-
Industrial	-	-	-	-	-	-	295,683	1,469,833	280	-	-	-	75,577	-	-
Retail Yards	-	-	-	-	-	-	10,812	834,237	-	-	-	-	9,491	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	50,387	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	368	-	-	-	-	-	-	-	-
Virginia Total	26,277	4,410	66,759	-	-	4,029	5,346,433	3,105,800	104,487	-	-	-	1,315	-	-
Industrial	20,576	3,150	59,161	-	-	4,029	3,908,806	1,928,481	83,530	-	-	-	1,315	-	-
Retail Yards	5,701	1,260	7,598	-	-	-	1,431,784	777,682	20,957	-	-	-	-	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	5,002	399,020	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	841	617	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
South Atlantic													
Delaware Total	-	-	-	-	-	-	-	-	372,785	-	52	52	372,837
Industrial	-	-	-	-	-	-	-	-	327,972	-	52	52	328,024
Retail Yards	-	-	-	-	-	-	-	-	43,460	-	-	-	43,460
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,353	-	-	-	1,353
District of Columbia Total	-	-	-	-	-	-	-	-	1,806,218	-	-	-	1,806,218
Industrial	-	-	-	-	-	-	-	-	1,282,352	-	-	-	1,282,352
Retail Yards	-	-	-	-	-	-	-	-	516,619	-	-	-	516,619
Byproduct and Water Gas	-	-	-	-	-	-	-	-	7,247	-	-	-	7,247
Florida Total	-	-	-	-	-	-	-	-	660,476	-	-	-	660,476
Industrial	-	-	-	-	-	-	-	-	442,222	-	-	-	442,222
Retail Yards	-	-	-	-	-	-	-	-	196,720	-	-	-	196,720
Byproduct and Water Gas	-	-	-	-	-	-	-	-	20,253	-	-	-	20,253
Smithing	-	-	-	-	-	-	-	-	1,281	-	-	-	1,281
Georgia Total	-	-	-	-	-	-	-	-	2,960,993	-	-	-	2,960,993
Industrial	-	-	-	-	-	-	-	-	1,514,089	-	-	-	1,514,089
Retail Yards	-	-	-	-	-	-	-	-	1,426,518	-	-	-	1,426,518
Byproduct and Water Gas	-	-	-	-	-	-	-	-	18,109	-	-	-	18,109
Smithing	-	-	-	-	-	-	-	-	2,277	-	-	-	2,277
Maryland Total	-	-	-	-	-	-	-	-	4,825,430	-	1,140,595	1,140,595	5,966,025
Industrial	-	-	-	-	-	-	-	-	2,507,038	-	1,004,962	1,004,962	3,512,000
Retail Yards	-	-	-	-	-	-	-	-	726,115	-	-	-	726,115
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,590,973	-	135,633	135,633	1,726,606
Smithing	-	-	-	-	-	-	-	-	1,304	-	-	-	1,304
North Carolina Total	-	-	-	-	-	-	-	-	5,954,483	-	318	318	5,954,801
Industrial	-	-	-	-	-	-	-	-	3,700,716	-	-	-	3,700,716
Retail Yards	-	-	-	-	-	-	-	-	2,147,849	-	318	318	2,148,167
Byproduct and Water Gas	-	-	-	-	-	-	-	-	104,621	-	-	-	104,621
Smithing	-	-	-	-	-	-	-	-	1,297	-	-	-	1,297
South Carolina Total	-	-	-	-	-	-	-	-	2,746,668	-	451	451	2,747,119
Industrial	-	-	-	-	-	-	-	-	1,841,373	-	451	451	1,841,824
Retail Yards	-	-	-	-	-	-	-	-	854,540	-	-	-	854,540
Byproduct and Water Gas	-	-	-	-	-	-	-	-	50,387	-	-	-	50,387
Smithing	-	-	-	-	-	-	-	-	368	-	-	-	368
Virginia Total	-	-	-	-	-	-	-	-	8,659,510	-	19,001	19,001	8,678,511
Industrial	-	-	-	-	-	-	-	-	6,009,048	-	18,729	18,729	6,027,777
Retail Yards	-	-	-	-	-	-	-	-	2,244,982	-	272	272	2,245,254
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	404,022	-	-	-	404,022
Smithing	-	-	-	-	-	-	-	-	1,458	-	-	-	1,458

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
West Virginia Total	199,547	2,630,871	1,466,227	69,030	-	328,165	353,951	4,222,504	-	-	-	-	-	-	-
Industrial	34,772	435,566	828,898	62,837	-	324,271	104,084	3,267,984	-	-	-	-	-	-	-
Retail Yards	7,240	-	62,869	6,193	-	3,894	105,658	43,714	-	-	-	-	-	-	-
Byproduct and Water Gas 3/	157,090	2,195,305	574,460	-	-	-	143,395	910,806	-	-	-	-	-	-	-
Smithing	445	-	-	-	-	-	814	-	-	-	-	-	-	-	-
East South Central															
Alabama Total	-	-	-	-	-	-	163,240	100,172	242,986	14,341	-	-	9,901,745	52	-
Industrial	-	-	-	-	-	-	28,542	18,160	175,514	2,382	-	-	1,901,022	-	-
Retail Yards	-	-	-	-	-	-	121	82,012	67,472	11,959	-	-	814,610	52	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	134,577	-	-	-	-	-	7,182,977	-	-
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	3,136	-	-
Kentucky Total	44	2,429	-	249	-	-	242,208	3,165,687	2,167,441	1,121	14,149	-	446	-	-
Industrial	-	2,429	-	199	-	-	1,345	932,154	1,509,846	-	13,287	-	-	-	-
Retail Yards	-	-	-	50	-	-	63,185	1,394,748	657,595	1,121	862	-	330	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	177,266	838,785	-	-	-	-	-	-	-
Smithing	44	-	-	-	-	-	412	-	-	-	-	-	116	-	-
Mississippi Total	30	-	-	-	-	-	-	1,810	379,945	36,112	-	-	175,148	-	-
Industrial	-	-	-	-	-	-	-	-	217,075	10,967	-	-	52,843	-	-
Retail Yards	-	-	-	-	-	-	-	1,810	162,870	25,145	-	-	119,452	-	-
Smithing	30	-	-	-	-	-	-	-	-	-	-	-	2,853	-	-
Tennessee Total	-	1,391	878	-	-	-	30,983	3,936,832	2,508,602	93,746	-	-	625,370	99	43
Industrial	-	1,391	878	-	-	-	16,788	2,405,498	1,245,849	5,808	-	-	282,625	-	-
Retail Yards	-	-	-	-	-	-	1,283	1,360,009	1,262,753	87,938	-	-	147,997	99	43
Byproduct and Water Gas 3/	-	-	-	-	-	-	12,857	169,915	-	-	-	-	192,205	-	-
Smithing	-	-	-	-	-	-	55	1,410	-	-	-	-	2,543	-	-
West South Central															
Arkansas Total	128	-	-	-	-	-	-	2,612	128,278	151,868	-	-	28,725	108,557	6,558
Industrial	-	-	-	-	-	-	-	-	71,841	50,761	-	-	6,815	43,696	2,735
Retail Yards	-	-	-	-	-	-	-	2,612	56,437	101,107	-	-	20,056	64,861	3,823
Smithing	128	-	-	-	-	-	-	-	-	-	-	-	1,854	-	-
Louisiana Total	114	-	-	-	-	-	-	-	55,561	20,256	-	-	75,551	794	5,262
Industrial	-	-	-	-	-	-	-	-	34,628	13,211	-	-	34,755	-	1,023
Retail Yards	-	-	-	-	-	-	-	-	20,933	7,045	-	-	36,333	794	4,239
Smithing	114	-	-	-	-	-	-	-	-	-	-	-	4,463	-	-
Oklahoma Total	323	-	-	-	-	-	-	-	-	-	-	-	101	90,692	552,509
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	89,401	384,299
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	1,291	168,210
Smithing	323	-	-	-	-	-	-	-	-	-	-	-	101	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
West Virginia Total	-	-	-	-	-	-	-	-	9,270,295	-	-	-	9,270,295
Industrial	-	-	-	-	-	-	-	-	5,058,412	-	-	-	5,058,412
Retail Yards	-	-	-	-	-	-	-	-	229,568	-	-	-	229,568
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	3,981,056	-	-	-	3,981,056
Smithing	-	-	-	-	-	-	-	-	1,259	-	-	-	1,259
East South Central													
Alabama Total	-	-	-	-	-	-	-	-	10,422,536	-	-	-	10,422,536
Industrial	-	-	-	-	-	-	-	-	2,125,620	-	-	-	2,125,620
Retail Yards	-	-	-	-	-	-	-	-	976,226	-	-	-	976,226
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	7,317,554	-	-	-	7,317,554
Smithing	-	-	-	-	-	-	-	-	3,136	-	-	-	3,136
Kentucky Total	-	-	-	-	-	-	-	-	5,593,774	-	-	-	5,593,774
Industrial	-	-	-	-	-	-	-	-	2,459,260	-	-	-	2,459,260
Retail Yards	-	-	-	-	-	-	-	-	2,117,891	-	-	-	2,117,891
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	1,016,051	-	-	-	1,016,051
Smithing	-	-	-	-	-	-	-	-	572	-	-	-	572
Mississippi Total	-	-	-	-	-	-	-	-	593,045	-	-	-	593,045
Industrial	-	-	-	-	-	-	-	-	280,885	-	-	-	280,885
Retail Yards	-	-	-	-	-	-	-	-	309,277	-	-	-	309,277
Smithing	-	-	-	-	-	-	-	-	2,883	-	-	-	2,883
Tennessee Total	-	-	-	-	-	-	-	-	7,197,944	-	-	-	7,197,944
Industrial	-	-	-	-	-	-	-	-	3,958,837	-	-	-	3,958,837
Retail Yards	-	-	-	-	-	-	-	-	2,860,122	-	-	-	2,860,122
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	374,977	-	-	-	374,977
Smithing	-	-	-	-	-	-	-	-	4,008	-	-	-	4,008
West South Central													
Arkansas Total	-	-	-	-	-	-	-	-	426,726	-	-	-	426,726
Industrial	-	-	-	-	-	-	-	-	175,848	-	-	-	175,848
Retail Yards	-	-	-	-	-	-	-	-	248,896	-	-	-	248,896
Smithing	-	-	-	-	-	-	-	-	1,982	-	-	-	1,982
Louisana Total	-	-	-	-	-	-	-	-	157,538	-	-	-	157,538
Industrial	-	-	-	-	-	-	-	-	83,617	-	-	-	83,617
Retail Yards	-	-	-	-	-	-	-	-	69,344	-	-	-	69,344
Smithing	-	-	-	-	-	-	-	-	4,577	-	-	-	4,577
Oklahoma Total	-	13,630	-	-	-	-	-	-	657,255	-	-	-	657,255
Industrial	-	-	-	-	-	-	-	-	473,700	-	-	-	473,700
Retail Yards	-	13,630	-	-	-	-	-	-	183,131	-	-	-	183,131
Smithing	-	-	-	-	-	-	-	-	424	-	-	-	424

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Texas Total	757	-	-	-	-	-	111	-	-	-	-	-	5,753	61,702	337,534
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	48	27,322	159,708
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	380	2,631	99,642
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	31,749	78,184
Smithing	757	-	-	-	-	-	111	-	-	-	-	-	5,325	-	-
Mountain															
Arizona Total	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado Total	1,028	-	-	-	-	-	-	-	-	-	-	-	-	18,919	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	8,354	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	1,994	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	-	-	-	-	-	8,571	-
Smithing	1,028	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idaho Total	295	-	-	-	-	-	428	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	113	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	226	-	-	-	-	-	-	-	-
Smithing	295	-	-	-	-	-	89	-	-	-	-	-	-	-	-
Montana Total	529	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	529	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nevada Total	806	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	806	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Mexico Total	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utah Total	137	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	137	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wyoming Total	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Texas Total	-	39,146	4,652	-	-	-	-	-	449,655	-	-	-	449,655
Industrial	-	15,926	44	-	-	-	-	-	203,048	-	-	-	203,048
Retail Yards	-	23,125	4,608	-	-	-	-	-	130,386	-	-	-	130,386
Byproduct and Water Gas	-	-	-	-	-	-	-	-	109,933	-	-	-	109,933
Smithing	-	95	-	-	-	-	-	-	6,288	-	-	-	6,288
Mountain													
Arizona Total	-	11,928	48,867	-	-	-	-	-	60,964	-	-	-	60,964
Industrial	-	8,112	21,984	-	-	-	-	-	30,096	-	-	-	30,096
Retail Yards	-	3,766	26,883	-	-	-	-	-	30,649	-	-	-	30,649
Smithing	-	50	-	-	-	-	-	-	219	-	-	-	219
Colorado Total	1,334,500	2,000,188	-	32,118	28,844	-	-	-	3,415,597	-	-	-	3,415,597
Industrial	744,112	319,791	-	27,234	52	-	-	-	1,099,543	-	-	-	1,099,543
Retail Yards	590,388	608,480	-	4,884	28,792	-	-	-	1,234,538	-	-	-	1,234,538
Byproduct and Water Gas 3/	-	1,071,470	-	-	-	-	-	-	1,080,041	-	-	-	1,080,041
Smithing	-	447	-	-	-	-	-	-	1,475	-	-	-	1,475
Idaho Total	-	5,136	-	203,129	884,507	-	15,748	1,313	1,110,556	-	-	-	1,110,556
Industrial	-	-	-	121,102	146,378	-	10,176	1,313	279,082	-	-	-	279,082
Retail Yards	-	5,136	-	82,027	738,129	-	5,572	-	831,090	-	-	-	831,090
Smithing	-	-	-	-	-	-	-	-	384	-	-	-	384
Montana Total	-	371	-	167,574	30,182	2,854	341,196	-	542,706	-	-	-	542,706
Industrial	-	-	-	73,517	473	88	141,590	-	215,668	-	-	-	215,668
Retail Yards	-	371	-	94,057	29,709	2,766	199,606	-	326,509	-	-	-	326,509
Smithing	-	-	-	-	-	-	-	-	529	-	-	-	529
Nevada Total	-	150	-	1,356	227,971	-	-	-	230,283	-	-	-	230,283
Industrial	-	-	-	1,306	155,944	-	-	-	157,250	-	-	-	157,250
Retail Yards	-	150	-	50	72,027	-	-	-	72,227	-	-	-	72,227
Smithing	-	-	-	-	-	-	-	-	806	-	-	-	806
New Mexico Total	-	166,017	35,741	-	-	-	-	-	201,880	-	-	-	201,880
Industrial	-	76,010	2,887	-	-	-	-	-	78,897	-	-	-	78,897
Retail Yards	-	89,700	32,854	-	-	-	-	-	122,554	-	-	-	122,554
Smithing	-	307	-	-	-	-	-	-	429	-	-	-	429
Utah Total	-	1,562	-	36,976	2,244,266	-	-	-	2,282,941	-	-	-	2,282,941
Industrial	-	226	-	36,258	516,977	-	-	-	553,461	-	-	-	553,461
Retail Yards	-	1,336	-	718	733,522	-	-	-	735,576	-	-	-	735,576
Byproduct and Water Gas 3/	-	-	-	-	993,767	-	-	-	993,767	-	-	-	993,767
Smithing	-	-	-	-	-	-	-	-	137	-	-	-	137
Wyoming Total	15,567	47,219	-	336,454	-	-	805	-	400,088	-	-	-	400,088
Industrial	11,973	22,628	-	192,601	-	-	202	-	227,404	-	-	-	227,404
Retail Yards	3,594	24,591	-	143,853	-	-	603	-	172,641	-	-	-	172,641
Smithing	-	-	-	-	-	-	-	-	43	-	-	-	43

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Pacific															
California Total	2,630	-	-	-	-	-	1,461	-	-	-	-	-	44	37,190	-
Industrial	-	-	-	-	-	-	1,069	-	-	-	-	-	-	28,721	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	69	-
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	8,400	-
Smithing	2,630	-	-	-	-	-	392	-	-	-	-	-	44	-	-
Oregon Total	982	-	-	-	-	-	45	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	982	-	-	-	-	-	45	-	-	-	-	-	-	-	-
Washington & Alaska Total	1,772	-	-	-	-	-	46	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	1,772	-	-	-	-	-	46	-	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown State Total	17,287	234,166	6,112	3,878	-	-	2,713	41,075	89	408	16,088	190	116	4,253	5,681
Industrial	8,038	227,711	6,112	3,878	-	-	2,657	33,960	89	408	16,088	-	116	2,363	1,456
Retail Yards	9,249	-	-	-	-	-	56	7,115	-	-	-	190	-	1,833	4,225
Byproduct and Water Gas	-	6,455	-	-	-	-	-	-	-	-	-	-	-	57	-
United States Total	22,890,886	46,682,307	19,547,299	12,607,557	40,413	1,399,509	28,765,157	61,654,197	8,609,854	40,584,431	13,598,430	705,462	11,461,845	1,619,955	5,831,668
Industrial	16,502,661	13,382,520	11,495,072	10,100,692	16,550	1,260,554	7,278,625	27,389,782	4,654,620	26,460,552	10,240,892	579,002	2,790,734	322,864	3,166,060
Retail Yards	2,311,797	2,464,642	2,762,890	2,494,678	23,863	138,955	14,331,589	23,553,124	3,955,234	13,870,738	3,273,320	126,360	1,271,197	1,248,314	2,587,424
Byproduct and Water Gas 3/	4,003,338	30,823,197	5,230,809	12,187	-	-	7,128,854	10,568,198	-	253,141	84,218	100	7,375,182	48,777	78,184
Smithing	65,290	488	376	-	-	-	16,452	3,081	-	-	-	-	24,732	-	-
Storage	7,800	11,460	58,152	-	-	-	9,637	140,012	-	-	-	-	-	-	-
Canada Total 4/	334,508	556,532	773,970	32,491	-	5,276	236,296	452,141	6,264	-	-	-	-	-	-
Industrial	253,225	309,041	585,351	12,170	-	4,355	19,882	210,204	6,114	-	-	-	-	-	-
Retail Yards	63,070	40,457	188,619	20,321	-	921	198,972	225,129	150	-	-	-	-	-	-
Byproduct and Water Gas	-	207,034	-	-	-	-	14,655	16,808	-	-	-	-	-	-	-
Smithing	18,213	-	-	-	-	-	2,787	-	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use not Reported	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United States & Canada Total	23,225,394	47,238,839	20,321,269	12,640,048	40,413	1,404,785	29,001,453	62,106,338	8,616,118	40,584,431	13,598,430	705,462	11,461,845	1,619,955	5,831,668
Industrial	16,755,886	13,691,561	12,080,423	10,112,862	16,550	1,264,909	7,298,507	27,599,986	4,660,734	26,460,552	10,240,892	579,002	2,790,734	322,864	3,166,060
Retail Yards	2,374,867	2,505,099	2,951,509	2,514,999	23,863	139,876	14,530,561	23,778,253	3,955,384	13,870,738	3,273,320	126,360	1,271,197	1,248,314	2,587,424
Byproduct and Water Gas 3/	4,003,338	31,030,231	5,230,809	12,187	-	-	7,143,509	10,585,006	-	253,141	84,218	100	7,375,182	48,777	78,184
Smithing	83,503	488	376	-	-	-	19,239	3,081	-	-	-	-	24,732	-	-
Storage	7,800	11,460	58,152	-	-	-	9,637	140,012	-	-	-	-	-	-	-
Use not Reported	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Pacific													
California Total	-	7,427	5,778	27,110	542,004	-	-	-	623,644	-	-	-	623,644
Industrial	-	1,633	1,437	16,606	86,543	-	-	-	136,009	-	-	-	136,009
Retail Yards	-	5,794	4,341	10,504	97,641	-	-	-	118,349	-	-	-	118,349
Byproduct and Water Gas	-	-	-	-	357,820	-	-	-	366,220	-	-	-	366,220
Smithing	-	-	-	-	-	-	-	-	3,066	-	-	-	3,066
Oregon Total	-	8,644	-	131,077	288,279	-	435	8,659	438,121	-	-	-	438,121
Industrial	-	-	-	84,230	64,199	-	239	8,579	157,247	-	-	-	157,247
Retail Yards	-	8,644	-	46,847	224,080	-	196	80	279,847	-	-	-	279,847
Smithing	-	-	-	-	-	-	-	-	1,027	-	-	-	1,027
Washington & Alaska Total	-	36,558	-	752,090	814,064	-	310,263	455,738	2,370,531	-	6,470	6,470	2,377,001
Industrial	-	227	-	452,448	139,292	-	186,553	339,922	1,118,442	-	6,470	6,470	1,124,912
Retail Yards	-	36,331	-	299,642	674,772	-	123,710	87,426	1,221,881	-	-	-	1,221,881
Byproduct and Water Gas	-	-	-	-	-	-	-	22,149	22,149	-	-	-	22,149
Smithing	-	-	-	-	-	-	-	-	1,818	-	-	-	1,818
Storage	-	-	-	-	-	-	-	6,241	6,241	-	-	-	6,241
Unknown State Total	1,370	973	-	-	-	-	-	-	334,399	-	5,099	5,099	339,498
Industrial	-	47	-	-	-	-	-	-	302,923	-	-	-	302,923
Retail Yards	1,370	926	-	-	-	-	-	-	24,964	-	5,099	5,099	30,063
Byproduct and Water Gas	-	-	-	-	-	-	-	-	6,512	-	-	-	6,512
United States Total	1,357,362	3,104,756	95,038	2,226,927	5,104,498	1,974,486	787,034	465,710	291,114,781	35,098,726	31,343,324	66,442,050	357,556,831
Industrial	756,174	459,627	26,352	1,261,460	1,110,449	986,473	368,945	349,814	140,960,474	13,228,158	19,827,064	33,055,222	174,015,696
Retail Yards	601,188	1,572,712	68,686	965,467	2,642,462	988,013	418,089	87,506	81,758,248	7,765,593	4,759,004	12,524,597	94,282,845
Byproduct and Water Gas 3/	-	1,071,470	-	-	1,351,587	-	-	22,149	68,051,391	14,101,015	6,757,011	20,858,026	88,909,417
Smithing	-	947	-	-	-	-	-	-	111,366	3,960	245	4,205	115,571
Storage	-	-	-	-	-	-	-	6,241	233,302	-	-	-	233,302
Canada Total 4/	-	-	-	-	-	-	-	-	2,397,478	11,473,907	254,458	11,728,365	14,125,843
Industrial	-	-	-	-	-	-	-	-	1,400,342	2,599,606	-	2,599,606	3,999,948
Retail Yards	-	-	-	-	-	-	-	-	737,639	10,712	-	10,712	748,351
Byproduct and Water Gas	-	-	-	-	-	-	-	-	238,497	2,904,512	-	2,904,512	3,143,009
Smithing	-	-	-	-	-	-	-	-	21,000	6	-	6	21,006
Storage	-	-	-	-	-	-	-	-	-	5,959,071	-	5,959,071	5,959,071
Use not Reported	-	-	-	-	-	-	-	-	-	-	254,458	254,458	254,458
United States & Canada Total	1,357,362	3,104,756	95,038	2,226,927	5,104,498	1,974,486	787,034	465,710	293,512,259	46,572,633	31,597,782	78,170,415	371,682,674
Industrial	756,174	459,627	26,352	1,261,460	1,110,449	986,473	368,945	349,814	142,360,816	15,827,764	19,827,064	35,654,828	178,015,644
Retail Yards	601,188	1,572,712	68,686	965,467	2,642,462	988,013	418,089	87,506	82,495,887	7,776,305	4,759,004	12,535,309	95,031,196
Byproduct and Water Gas 3/	-	1,071,470	-	-	1,351,587	-	-	22,149	68,289,888	17,005,527	6,757,011	23,762,538	92,052,426
Smithing	-	947	-	-	-	-	-	-	132,366	3,966	245	4,211	136,577
Storage	-	-	-	-	-	-	-	6,241	233,302	5,959,071	-	5,959,071	6,192,373
Use not Reported	-	-	-	-	-	-	-	-	-	-	254,458	254,458	254,458

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2. Export overseas 5/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Vessel and Bunker Fuel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Railroad Fuel-U.S. and Canada	7,088,935	11,620,008	13,582,972	10,532,117	1,676	1,236,830	929,615	13,839,453	7,361,835	23,382,485	8,084,143	189,085	3,808,471	128,468	2,038,708
5. Tidewater	13,904,493	1,503,522	4,533,217	-	-	36,943	13,890,582	6,842,541	886,447	552,976	-	-	1,157,351	3,718	184,409
6. Lake	2,532,129	7,485,845	4,453,274	4,261,268	-	463,375	9,832,118	22,062,656	524,126	127,110	-	-	-	-	-
7. Truck 6/	1,339,892	4,217,586	198,582	4,620,140	60,580	598,241	186,296	1,033,912	616,784	5,689,371	1,692,950	485,844	398,700	11,871	823,909
8. Distributors and Wholesalers (Destination and Use Unknown)	592,320	1,246,765	161,617	103,761	-	12,730	273,928	1,080,718	135,422	134,255	76,048	867	1,375	11,858	53,194
9. Private Railroads, Tramways, and Conveyors	334,304	1,177,845	394,614	48,000	-	880,229	156,780	389,318	61,382	132,725	510,560	-	349,767	-	2,969
10. Coal used at mine 7/	606,637	397,268	115,015	89,385	9,890	5,099	794,551	882,457	89,493	1,076,096	148,202	15,222	190,663	8,578	27,739
11. Other disposals not specified above	1,369	4,325	304	-	-	-	1,619	14,150	-	1,161	-	-	-	-	655
12. Net change in Inventory	68,725	37,372	60,202	44,223	-444	14,051	199,764	307,120	56,985	164,974	83,303	2,952	113,716	4,047	13,013
Total Production Reported	49,694,198	74,929,375	43,821,066	32,338,942	112,115	4,652,283	55,266,706	108,558,663	18,348,592	71,845,584	24,193,636	1,399,432	17,481,888	1,788,495	8,976,264
13. Estimated Truck Production not Reported 8/	2,344,914	2,192,107	925,169	1,137,107	4,628	57,351	63,659	3,608,567	2,093,049	556,656	454,083	474,861	1,085,140	67,595	448,355
GRAND TOTAL	52,039,112	77,121,482	44,746,235	33,476,049	116,743	4,709,634	55,330,365	112,167,230	20,441,641	72,402,240	24,647,719	1,874,293	18,567,028	1,856,090	9,424,619

1/ Includes shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use as follows: District 2, 988,467 tons; District 3, 19,176 tons; District 8, 8,625 tons; District 10, 57,881 tons; District 13, 7 tons; District 19, 7 tons; District 23, 2,959 tons.

2/ Represents the distribution of coal that moved from the mines via Lake and tidewater during this period to consumer states. The total tonnages arrived at in these columns represent the tonnages of interport shipments for all consumer uses (excluding shipments to all storage docks excepting those in Canada) plus the tonnages of ex-dock shipments as shown on Tables Nos. 2 and 3.

3/ Include shipments to beehive coke ovens also.

4/ Certain transshippers are delinquent in filing data required, particularly with respect to movements of coal for account of Canadian distributors who themselves arrange for transshipment. The total reported shipments of bituminous coal to Canada during the year ended March 31, 1946, including railroad fuel, was 20,993,584 tons and accounts for 92.1 percent of the grand total shipments to Canada. Reported shipments of railroad fuel to Canada are included in Item 4, "Railroad Fuel."

5/ The item export includes only shipments to tidewater ports for cargoes destined to points outside the United States and Canada as are reported to this office. The tonnages shown here are not all inclusive.

6/ Includes only mines with an average daily capacity of 50 tons or more and all mines with rail or river connections that report on Forms S.F.A. Nos. 38 and 56.

7/ Includes coal used to produce coal, coal used by mine employees and coal made into briquets or packaged fuel at the reporting mine.

8/ Represents total truck tonnages reported for the calendar year 1945 less (1) tonnages included in Rail, River and Ex-river movement for shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use and (2) truck tonnage shown in Item 7. These approximate tonnages were those produced at small truck mines not required to report on Forms S.F.A. Nos. 38 and 56.

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946 (continued)

REGION, STATE AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
2. Export overseas 5/	-	-	-	-	-	-	-	-	-	-	10,086,679	10,086,679	10,086,679
3. Vessel and Bunker Fuel	-	-	-	-	-	-	-	-	-	2,799,709	1,312,879	4,112,588	4,112,588
4. Railroad Fuel-U.S. and Canada	85,168	1,880,349	93,511	7,164,619	1,027,690	118,285	3,328,453	401,382	117,924,258	5,208,714	492,268	5,700,982	123,625,240
5. Tidewater	-	147,664	-	-	73,597	-	-	1,530	43,718,990	-	-	-	-
6. Lake	-	-	-	-	-	-	-	-	51,741,901	-	-	-	-
7. Truck 6/	750,645	430,497	26,975	85,344	173,955	110,092	42,502	261,674	23,856,342	-	-	-	23,856,342
8. Distributors and Wholesalers (Destination and Use Unknown)	31	20,228	-	94,847	114,674	-	19,583	23,886	4,158,107	-	-	-	4,158,107
9. Private Railroads, Tramways, and Conveyors	23,401	13,650	24,138	-	1,894	-	-	18,815	4,520,391	-	-	-	4,520,391
10. Coal used at mine 7/	55,016	111,131	12,666	145,349	32,689	112,993	16,377	27,474	4,969,990	-	-	-	4,969,990
11. Other disposals not specified above	-	-	-	-	123	-	-	-	23,706	-	-	-	23,706
12. Net change in Inventory	634	21,678	2,369	32,437	33,468	3,050	1,233	-59,646	1,205,226	-	-	-	1,205,226
Total Production Reported	2,272,257	5,729,953	254,697	9,749,523	6,562,588	2,318,906	4,195,182	1,140,825	545,631,170	54,581,056	43,489,608	98,070,664	548,240,943
13. Estimated Truck Production not Reported 8/	25,842	239,478	57,916	37,734	51,084	339,438	112,748	166,483	16,543,964	-	-	-	16,543,964
GRAND TOTAL	2,298,099	5,969,431	312,613	9,787,257	6,613,672	2,658,344	4,307,930	1,307,308	562,175,134	54,581,056	43,489,608	98,070,664	564,784,907

TABLE 2

SHIPMENTS OF BITUMINOUS COAL VIA TIDEWATER TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS, AND FORM S.F.A. NO. 48, DURING THE YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE.1/
(In net tons of 2,000 pounds)

State of Destination and Use	DISTRICT OF ORIGIN (Interport shipments only to alongside consumers)															Total shipments to alongside consumers	Ex-dock shipments from Commercial docks 2/	Grand Total
	1	2	3	6	7	8	9	10	13	14	16	17	19	20	23			
Connecticut																		
Total	136,230	5,577	24,228	-	825,381	355,678	-	-	-	-	-	-	-	-	-	1,347,094	1,760,903	3,107,997
Industrial	135,086	1,792	11,899	-	449,833	89,535	-	-	-	-	-	-	-	-	-	688,145	1,296,238	1,984,383
Retail Dealers	1,144	-	6,478	-	7,071	373	-	-	-	-	-	-	-	-	-	15,066	452,966	468,032
Byproduct	-	3,785	5,851	-	368,477	248,488	-	-	-	-	-	-	-	-	-	626,601	-	626,601
Water Gas	-		-	-	-	17,282	-	-	-	-	-	-	-	-	-	17,282	11,699	28,981
Delaware																		
Total	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	-	52
Industrial	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	-	52
Maine																		
Total	28,260	-	-	-	230,609	5,514	-	-	-	-	-	-	-	-	-	264,383	995,913	1,260,296
Industrial	28,260	-	-	-	207,518	2,190	-	-	-	-	-	-	-	-	-	237,968	638,444	876,412
Retail Dealers	-	-	-	-	23,091	3,324	-	-	-	-	-	-	-	-	-	26,415	351,953	378,368
Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,271	5,271
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	245
Maryland																		
Total	996,611	29,554	6,530	-	107,900	-	-	-	-	-	-	-	-	-	-	1,140,595	-	1,140,595
Industrial	996,611	5,359	2,992	-	-	-	-	-	-	-	-	-	-	-	-	1,004,962	-	1,004,962
Byproduct	-	-	-	-	107,900	-	-	-	-	-	-	-	-	-	-	107,900	-	107,900
Water Gas	-	24,195	3,538	-	-	-	-	-	-	-	-	-	-	-	-	27,733	-	27,733
Massachusetts																		
Total	95,512	-	9,841	-	1,924,923	322,552	-	-	-	-	-	-	-	-	-	2,352,828	4,386,593	6,739,421
Industrial	95,512	-	7,600	-	1,690,850	149,702	-	-	-	-	-	-	-	-	-	1,943,664	1,087,085	3,030,749
Retail Dealers	-	-	2,241	-	196,661	1,455	-	-	-	-	-	-	-	-	-	200,357	1,721,357	1,921,714
Byproduct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,576,569	1,576,569
Water Gas	-	-	-	-	37,412	171,395	-	-	-	-	-	-	-	-	-	208,807	1,582	210,389
New Hampshire																		
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400,939	400,939
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260,240	260,240
Retail Dealers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139,421	139,421
Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,278	1,278
New Jersey																		
Total	1,553,488	57,249	806,191	-	1,316,810	1,063,465	-	-	-	-	-	-	-	-	-	4,797,203	-	4,797,203
Industrial	1,553,488	51,855	775,148	-	800,768	-	-	-	-	-	-	-	-	-	-	3,181,259	-	3,181,259
Byproduct	-	5,394	26,645	-	408,801	1,063,465	-	-	-	-	-	-	-	-	-	1,504,305	-	1,504,305
Water Gas	-	-	4,398	-	107,241	-	-	-	-	-	-	-	-	-	-	111,639	-	111,639
New York																		
Total	6,793,258	236,860	836,903	-	995,549	791,239	-	-	-	-	-	-	-	-	-	9,653,809	236,016	9,889,825
Industrial	6,173,856	185,262	694,777	-	74,784	6,155	-	-	-	-	-	-	-	-	-	7,134,834	-	7,134,834
Retail Dealers	603,622	45,872	94,919	-	145,121	7,917	-	-	-	-	-	-	-	-	-	897,451	236,016	1,133,467
Byproduct	-	5,726	24,531	-	687,359	14,409	-	-	-	-	-	-	-	-	-	732,025	-	732,025
Water Gas	15,780	-	22,676	-	88,285	762,758	-	-	-	-	-	-	-	-	-	889,499	-	889,499
North Carolina																		
Total	-	-	-	-	318	-	-	-	-	-	-	-	-	-	-	318	-	318
Retail Dealers	-	-	-	-	318	-	-	-	-	-	-	-	-	-	-	318	-	318
Pennsylvania																		
Total	1,884,870	12,701	269,622	-	240,006	124,878	-	-	-	-	-	-	-	-	-	2,532,077	-	2,532,077
Industrial	1,884,870	2,737	81,615	-	4,275	-	-	-	-	-	-	-	-	-	-	1,973,497	-	1,973,497
Byproduct	-	9,964	188,007	-	235,731	124,878	-	-	-	-	-	-	-	-	-	558,580	-	558,580
Rhode Island																		
Total	28,727	-	4,459	-	407,509	217,738	-	-	-	-	-	-	-	-	-	658,433	755,041	1,413,474
Industrial	28,484	-	4,459	-	226,869	20,778	-	-	-	-	-	-	-	-	-	280,590	44,727	325,317
Retail Dealers	243	-	-	-	1,359	-	-	-	-	-	-	-	-	-	-	1,602	710,314	711,916
Byproduct	-	-	-	-	72,418	20,120	-	-	-	-	-	-	-	-	-	92,538	-	92,538
Water Gas	-	-	-	-	106,863	176,840	-	-	-	-	-	-	-	-	-	283,703	-	283,703
South Carolina																		
Total	-	-	-	-	451	-	-	-	-	-	-	-	-	-	-	451	-	451
Industrial	-	-	-	-	451	-	-	-	-	-	-	-	-	-	-	451	-	451
Vermont																		
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30,106	30,106
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29,709	29,709
Retail Dealers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	397	397
Virginia																		
Total	1,223	-	-	-	17,778	-	-	-	-	-	-	-	-	-	-	19,001	-	19,001
Industrial	1,223	-	-	-	17,506	-	-	-	-	-	-	-	-	-	-	18,729	-	18,729
Retail Dealers	-	-	-	-	272	-	-	-	-	-	-	-	-	-	-	272	-	272
Washington																		
Total	1,565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,565	-	1,565
Industrial	1,565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,565	-	1,565
Unknown State																		
Total	385	280	1,001	-	2,770	663	-	-	-	-	-	-	-	-	-	5,099	-	5,099
Retail Dealers	385	280	1,001	-	2,770	663	-	-	-	-	-	-	-	-	-	5,099	-	5,099
United States																		
Total	11,520,181	342,221	1,958,775	-	6,070,004	2,881,727	-	-	-	-	-	-	-	-	-	22,772,908	8,565,511	31,338,419
Industrial	10,899,007	247,005	1,578,490	-	3,472,854	268,360	-	-	-	-	-	-	-	-	-	16,465,716	3,356,443	19,822,159
Retail Dealers	605,394	46,152	104,639	-	376,663	13,732	-	-	-	-	-	-	-	-	-	1,146,580	3,612,424	4,759,004
Byproduct	-	24,869	245,034	-	1,880,686	1,471,360	-	-	-	-	-	-	-	-	-	3,621,949	1,576,569	5,198,518
Water Gas	15,780	24,195	30,612	-	339,801	1,128,275	-	-	-	-	-	-	-	-	-	1,538,663	19,830	1,558,493
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	245
Alaska																		
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	4,587	318	4,905	-	4,905
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	4,587	318	4,905	-	4,905
Canada																		
Total	15,755	3,206	24,519	-	93,356	117,622	-	-	-	-	-	-	-	-	-	254,458	-	254,458
Use Not Reported	15,755	3,206	24,519	-	93,356	117,622	-	-	-	-	-	-	-	-	-	254,458	-	254,458
U. S., Alaska, and Canada																		
Total	11,535,936	345,427	1,983,294	-	6,163,360	2,999,349	-	-	-	-	-	-	-	4,587	318	23,032,271	8,565,511	31,597,782
Industrial	10,899,007	247,005	1,578,490	-	3,472,854	268,360	-	-	-	-	-	-	-	4,587	318	16,470,621	3,356,443	19,827,064
Retail Dealers	605,394	46,152	104,639	-	376,663	13,732	-	-	-	-	-	-	-	-	-	1,146,580	3,612,424	4,759,004
Byproduct	-	24,869	245,034	-	1,880,686	1,471,360	-	-	-	-	-	-	-	-	-	3,621,949	1,576,569	5,198,518
Water Gas	15,780	24,195	30,612	-	339,801	1,128,275	-	-	-	-	-	-	-	-	-	1,538,663	19,830	1,558,493
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	245
Use Not Reported	15,755	3,206	24,519	-	93,356	117,622	-	-	-	-	-	-	-	-	-	254,458	-	254,458
Railroad Fuel	-	-	-	-	-	449,673	-	-	-	-	-	-	-	-	-	449,673	42,595	492,268
Bunker Fuel	337,550	10,619	197,022	-	553,729	110,137	-	12,211	59,202	-	-	-	97	1,324	6,911	1,288,802	24,077	1,312,879
Exports Overseas 3/	2,888,268	1,005,079	761,536	13,399	1,145,041	1,401,114	1,432,902	210,882	793,171	344	249,021	131,848	28,013	26,061	-	10,086,679	-	10,086,679
GRAND TOTAL	14,761,754	1,361,125	2,941,852	13,399	7,862,130	4,960,273	1,432,902	223,093	852,373	344	249,021	131,848	28,110	31,972	7,229	34,857,425	8,632,183	43,489,608

1/ Represents the distribution of coal that moved from the mines via tidewater during the year ended March 31, 1946 to consumer states, by uses.
2/ District of Origin of coal moving from commercial docks not ascertainable.
3/ This item includes only such shipments to tidewater ports for cargoes destined to points outside the United States and Canada as are reported to this office. The tonnages shown are not all inclusive.

SHIPMENTS OF BITUMINOUS COAL VIA GREAT LAKES TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE. 1/

(In net tons of 2,000 pounds)

TABLE 3

State of Destination and Use	DISTRICT OF ORIGIN (Interport shipments only to alongside consumers)									Total shipments to alongside Consumers	Ex-dock shipments from Commercial Docks 2/	Grand Total
	1	2	3	4	6	7	8	9	10			
Illinois												
Total	-	287,815	2,472	-	-	522,307	954,821	-	-	1,767,415	132,679	1,900,094
Industrial	-	-	-	-	-	-	-	-	-	-	54,218	54,218
Retail Dealers	-	-	-	-	-	5,729	24,371	-	-	30,100	78,415	108,515
Byproduct	-	287,815	2,472	-	-	516,578	930,450	-	-	1,737,315	-	1,737,315
Smithing	-	-	-	-	-	-	-	-	-	-	46	46
Indiana												
Total	-	99,908	-	-	-	2,150,983	2,075,764	-	-	4,326,655	-	4,326,655
Byproduct	-	99,908	-	-	-	2,150,983	2,075,764	-	-	4,326,655	-	4,326,655
Iowa												
Total	-	-	-	-	-	-	-	-	-	-	94,907	94,907
Industrial	-	-	-	-	-	-	-	-	-	-	667	667
Retail Dealers	-	-	-	-	-	-	-	-	-	-	94,233	94,233
Smithing	-	-	-	-	-	-	-	-	-	-	7	7
Michigan												
Total	217,306	1,845,246	560,917	190,783	1,002	1,234,008	6,074,040	-	72,275	10,195,579	1,484,719	11,680,298
Industrial	217,306	1,435,202	250,677	177,610	1,002	474,433	3,910,786	-	67,243	6,534,259	588,241	7,122,500
Retail Dealers	-	6,095	-	13,056	-	10,148	353,815	-	5,032	388,146	879,414	1,267,560
Byproduct	-	394,902	310,240	117	-	749,427	1,809,439	-	-	3,264,125	15,299	3,279,424
Water Gas	-	9,049	-	-	-	-	-	-	-	9,049	-	9,049
Smithing	-	-	-	-	-	-	-	-	-	-	1,765	1,765
Minnesota												
Total	-	16,759	-	-	-	-	6,391	-	-	23,150	3,870,623	3,893,773
Industrial	-	16,759	-	-	-	-	6,391	-	-	23,150	1,331,979	1,355,129
Retail Dealers	-	-	-	-	-	-	-	-	-	-	2,099,581	2,099,581
Byproduct	-	-	-	-	-	-	-	-	-	-	430,721	430,721
Water Gas	-	-	-	-	-	-	-	-	-	-	6,619	6,619
Smithing	-	-	-	-	-	-	-	-	-	-	1,723	1,723
Nebraska												
Total	-	-	-	-	-	-	-	-	-	-	9,444	9,444
Retail Dealers	-	-	-	-	-	-	-	-	-	-	9,444	9,444
New York												
Total	672,264	978,278	543,402	-	22,125	751,257	195,712	-	-	3,163,038	36,756	3,199,794
Industrial	669,185	48,907	499,833	-	21,410	-	-	-	-	1,239,335	36,756	1,276,091
Retail Dealers	3,079	32,319	-	-	715	-	-	-	-	36,113	-	36,113
Byproduct	-	897,052	43,569	-	-	751,257	195,712	-	-	1,887,590	-	1,887,590
North Dakota												
Total	-	-	-	-	-	-	-	-	-	-	212,640	212,640
Industrial	-	-	-	-	-	-	-	-	-	-	40,423	40,423
Retail Dealers	-	-	-	-	-	-	-	-	-	-	172,134	172,134
Smithing	-	-	-	-	-	-	-	-	-	-	83	83
Ohio												
Total	-	-	-	-	-	116,476	337,052	-	-	453,528	-	453,528
Retail Dealers	-	-	-	-	-	260	454	-	-	714	-	714
Byproduct	-	-	-	-	-	116,216	336,598	-	-	452,814	-	452,814
Pennsylvania												
Total	-	-	-	-	-	66,053	156,601	-	-	222,654	-	222,654
Byproduct	-	-	-	-	-	66,053	156,601	-	-	222,654	-	222,654
South Dakota												
Total	-	-	-	-	-	-	-	-	-	-	346,941	346,941
Industrial	-	-	-	-	-	-	-	-	-	-	13,458	13,458
Retail Dealers	-	-	-	-	-	-	-	-	-	-	333,447	333,447
Smithing	-	-	-	-	-	-	-	-	-	-	36	36
Wisconsin												
Total	215,111	408,588	322,986	-	208	528,686	1,146,194	-	3,686	2,625,459	6,132,539	8,757,998
Industrial	215,111	360,242	306,135	-	208	35,256	110,257	-	3,686	1,030,895	2,334,777	3,365,672
Retail Dealers	-	-	-	-	-	20,816	46,050	-	-	66,866	3,576,986	3,643,852
Byproduct	-	48,346	16,851	-	-	472,614	989,887	-	-	1,527,698	220,362	1,748,060
Water Gas	-	-	-	-	-	-	-	-	-	-	114	114
Smithing	-	-	-	-	-	-	-	-	-	-	300	300
United States												
Total	1,104,681	3,636,596	1,429,777	190,783	23,335	5,369,770	10,946,575	-	75,961	22,777,478	12,321,248	35,098,726
Industrial	1,101,602	1,861,110	1,056,645	177,610	22,620	509,689	4,027,434	-	70,929	8,827,639	4,400,519	13,228,158
Retail Dealers	3,079	38,414	-	13,056	715	36,953	424,690	-	5,032	521,939	7,243,654	7,765,593
Byproduct	-	1,728,023	373,132	117	-	4,823,128	6,494,451	-	-	13,418,851	666,382	14,085,233
Water Gas	-	9,049	-	-	-	-	-	-	-	9,049	6,733	15,782
Smithing	-	-	-	-	-	-	-	-	-	-	3,960	3,960
Canada (excludes railroad fuel)												
Total	1,596,691	2,045,769	2,264,650	442,677	215,647	1,083,216	3,746,794	45,443	14,645	11,455,532	18,375	11,473,907
Industrial	540,877	272,271	727,649	138,399	5,040	385,696	476,574	45,443	-	2,591,949	7,657	2,599,606
Retail Dealers	-	-	-	-	-	-	-	-	-	-	10,712	10,712
Byproduct	131,504	619,103	21,844	-	-	335,010	1,524,360	-	14,645	2,646,466	-	2,646,466
Water Gas	-	132,500	-	-	-	-	125,546	-	-	258,046	-	258,046
Smithing	-	-	-	-	-	-	-	-	-	-	6	6
Storage or Consignment 3/	924,310	1,021,895	1,515,157	304,278	210,607	362,510	1,620,314	-	-	5,959,071	-	5,959,071
United States and Canada												
Total	2,701,372	5,682,365	3,694,427	633,460	238,982	6,452,986	14,693,369	45,443	90,606	34,233,010	12,339,623	46,572,633
Industrial	1,642,479	2,133,381	1,784,294	316,009	27,660	895,385	4,504,008	45,443	70,929	11,419,588	4,408,176	15,827,764
Retail Yards	3,079	38,414	-	13,056	715	36,953	424,690	-	5,032	521,939	7,254,366	7,776,305
Byproduct	131,504	2,347,126	394,976	117	-	5,158,138	8,018,811	-	14,645	16,065,317	666,382	16,731,699
Water Gas	-	141,549	-	-	-	-	125,546	-	-	267,095	6,733	273,828
Smithing	-	-	-	-	-	-	-	-	-	-	3,966	3,966
Storage or Consignment 3/	924,310	1,021,895	1,515,157	304,278	210,607	362,510	1,620,314	-	-	5,959,071	-	5,959,071
Railroad Fuel-United States & Canada	31,852	448,970	281,145	1,526,057	83,458	58	77,158	514,128	78,126	3,040,952	2,167,762	5,208,714
Vessel Fuel	6,019	335,836	65,466	437,089	35,262	2,745	435,212	-	-	1,317,629	1,482,080	2,799,709
GRAND TOTAL	2,739,243	6,467,171	4,041,038	2,596,606	357,702	6,455,789	15,205,739	559,571	168,732	38,591,591	15,989,465	54,581,056

1/ Represents the distribution of coal that moved from the mines via Great Lakes during the year ended March 31, 1946, to consumer states, by uses.

2/ District of origin of coal moving from commercial docks not ascertainable.

3/ Interport movement to Canada for storage or consignment is shown since Canadian Dock Operators are not required to file Form S.F.A. No. 48 reporting distribution from Commercial docks.

TABLE 4.

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, USE, CONSOLIDATED SIZE GROUP, AND METHOD OF MOVEMENT AS REPORTED ON FORMS S.F.A. NOS. 38, 48, AND 56 AND CARGO MANIFESTS, INVOICES, AND SUMMARY REPORTS

(In net tons of 2,000 pounds)

10336

Size Group and Movement / District and Use	All Lump Coal and All Double Screened Coal with Top Size over 2" (1)					All Double Screened Coal with Top Size not Exceeding 2" (2)					M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size over 2" (3)					All Minus Resultant and Deducted Screenings with Top Size over 3/4" and not Exceeding 2" (4)				
	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total
		Tidewater	Lake				Tidewater	Lake				Tidewater	Lake				Tidewater	Lake		
District 1. Eastern Pennsylvania																				
Total	1,953,891	116,097	113,379	118,667	2,302,034	1,492,139	242,256	302,298	76,504	2,113,197	21,284,482	12,051,723	1,358,981	1,005,617	35,700,803	2,272,213	336,466	224,418	36,770	2,869,867
Railroad Fuel	360,379	-	31,723	-	392,102	92,703	-	-	-	92,703	6,397,956	-	129	-	6,398,085	48,437	-	-	-	48,437
Industrial	679,844	4,295	9,122	-	693,261	950,630	39,145	99,038	-	1,088,813	10,409,756	8,611,178	979,864	-	20,000,798	1,584,939	330,050	69,292	-	1,984,281
Retail Dealers	858,747	39,576	-	-	898,323	405,177	198,739	1,799	-	605,715	936,119	319,440	1,280	-	1,256,839	120,375	5,744	-	-	126,119
Byproduct and Water Gas 5/	50,566	-	-	-	50,566	43,386	-	-	-	43,386	2,956,670	15,108	-	-	2,971,778	515,981	672	-	-	516,653
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	68,460	-	68,460	-	-	200,348	-	200,348	-	-	377,551	-	377,551	-	-	154,451	-	154,451
Bunker and Vessel Fuel	-	62,614	4,074	-	66,688	-	1,297	1,113	-	2,410	-	269,554	157	-	269,711	-	-	675	-	675
Export 6/	-	9,612	-	-	9,612	-	3,075	-	-	3,075	-	2,820,688	-	-	2,820,688	-	-	-	-	-
Use not Reported	4,355	-	-	118,667	123,022	243	-	-	76,504	76,747	583,981	15,755	-	1,005,617	1,605,353	2,481	-	-	36,770	39,251
District 2. Western Pennsylvania																				
Total	5,329,538	64,547	848,871	1,678,004	7,920,960	2,030,724	49,222	314,937	367,204	2,762,087	48,117,191	1,127,040	4,320,561	1,244,419	54,809,211	4,255,249	51,284	880,418	714,352	5,901,303
Railroad Fuel	1,321,970	-	98,304	-	1,420,274	206,522	-	64	-	206,586	9,481,321	-	344,320	-	9,825,641	515,638	-	6,282	-	521,920
Industrial	1,750,859	19,265	54,736	-	1,824,860	1,065,711	40,211	64,039	-	1,169,961	8,650,025	122,860	1,821,473	-	10,594,358	2,489,327	26,099	125,367	-	2,640,793
Retail Dealers	1,698,622	10,334	6,095	-	1,715,051	537,008	7,757	4,766	-	549,531	88,440	17,043	-	-	105,483	171,821	-	27,553	-	199,374
Byproduct and Water Gas 5/	490,786	-	234,588	-	725,374	202,614	-	48,355	-	250,969	28,821,204	25,040	1,771,336	-	30,617,580	1,006,468	24,024	429,758	-	1,460,250
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	11,419	-	232,466	-	243,885	35	-	188,526	-	188,561	6	-	370,626	-	370,632	-	-	202,044	-	202,044
Bunker and Vessel Fuel	-	5,381	222,682	-	228,063	-	-	9,187	-	9,187	-	5,238	12,806	-	18,044	-	-	89,414	-	89,414
Export 6/	-	29,463	-	-	29,463	-	1,254	-	-	1,254	-	953,757	-	-	953,757	-	1,161	-	-	1,161
Use not Reported	55,882	104	-	1,678,004	1,733,990	18,834	-	-	367,204	386,038	1,076,195	3,102	-	1,244,419	2,323,716	71,995	-	-	714,352	786,347
District 3. Northern West Virginia 7/																				
Total	2,045,546	191,152	431,573	27,082	2,695,353	6,340,712	358,287	820,772	74,614	7,594,385	20,367,383	1,732,678	1,511,539	88,537	23,700,137	2,401,817	73,814	584,724	191	3,060,546
Railroad Fuel	536,622	-	71,614	-	608,236	2,452,399	-	150,418	-	2,602,817	10,380,296	-	58,760	-	10,439,056	116,124	-	104	-	116,228
Industrial	397,979	3,378	32,056	-	433,413	2,241,754	244,650	129,942	-	2,616,346	4,908,796	781,157	705,134	-	6,395,087	1,982,003	66,962	375,022	-	2,423,987
Retail Dealers	1,011,206	16,757	-	-	1,027,963	1,233,786	12,285	-	-	1,246,071	446,538	32,233	-	-	478,771	214,003	2,493	-	-	216,496
Byproduct and Water Gas 5/	91,344	11,550	11,844	-	114,738	407,630	14,662	14,558	-	436,850	4,510,544	184,732	351,546	-	5,046,822	7,045	4,359	7,613	-	19,017
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	8,246	-	285,440	-	293,686	-	-	494,470	-	494,470	24,026	-	394,771	-	418,797	25,880	-	200,552	-	226,432
Bunker and Vessel Fuel	-	50,917	30,619	-	81,536	-	42,166	31,384	-	73,550	-	101,575	1,328	-	102,903	-	-	1,433	-	1,433
Export 6/	-	99,096	-	-	99,096	-	42,089	-	-	42,089	-	620,351	-	-	620,351	-	-	-	-	-
Use not Reported	149	9,454	-	27,082	36,685	5,143	2,435	-	74,614	82,192	97,183	12,630	-	88,537	198,350	56,762	-	-	191	56,953
District 4. Ohio																				
Total	4,119,018	-	860,370	1,323,761	6,303,149	1,329,670	-	113,685	343,454	1,786,809	11,606,032	-	1,326,553	1,991,899	14,924,484	3,995,055	-	162,209	808,474	4,965,738
Railroad Fuel	1,620,174	-	311,132	-	1,931,306	20,868	-	13,580	-	34,448	8,625,981	-	1,197,128	-	9,823,109	231,809	-	1,853	-	233,662
Industrial	703,648	-	17,192	-	720,840	815,637	-	46,478	-	862,115	2,855,537	-	53,917	-	2,909,454	3,576,373	-	91,244	-	3,667,617
Retail Dealers	1,778,979	-	6,754	-	1,785,733	492,089	-	6,302	-	498,391	55,343	-	-	-	55,343	166,109	-	-	-	166,109
Byproduct and Water Gas	-	-	-	-	-	255	-	-	-	255	-	-	117	-	117	5,880	-	-	-	5,880
Storage	-	-	112,215	-	112,215	-	-	40,884	-	40,884	-	-	70,188	-	70,188	-	-	59,179	-	59,179
Bunker and Vessel Fuel	-	-	413,077	-	413,077	-	-	6,441	-	6,441	-	-	5,203	-	5,203	-	-	9,933	-	9,933
Use not Reported	16,217	-	-	1,323,761	1,339,978	821	-	-	343,454	344,275	69,171	-	-	1,991,899	2,061,070	14,884	-	-	808,474	823,358
District 5. Michigan																				
Total	25,709	-	-	45,634	71,343	-	-	-	-	-	2,817	-	-	-	2,817	13,563	-	-	14,946	28,509
Railroad Fuel	1,630	-	-	-	1,630	-	-	-	-	-	-	-	-	-	-	46	-	-	-	46
Industrial	2,654	-	-	-	2,654	-	-	-	-	-	2,817	-	-	-	2,817	11,079	-	-	-	11,079
Retail Dealers	21,425	-	-	-	21,425	-	-	-	-	-	-	-	-	-	-	2,438	-	-	-	2,438
Use not Reported	-	-	-	45,634	45,634	-	-	-	-	-	-	-	-	-	-	-	-	-	14,946	14,946
District 6. Panhandle																				
Total	290,048	-	187,518	190,702	668,268	155,285	-	65,776	34,837	255,898	2,719,274	13,399	15,006	320,970	3,068,649	189,087	-	47,332	39,775	276,194
Railroad Fuel	76,688	-	64,701	-	141,389	15,873	-	16,465	-	32,338	1,126,910	-	2,292	-	1,129,202	2,979	-	-	-	2,979
Industrial	143,288	-	3,542	-	146,830	81,979	-	-	-	81,979	1,584,642	-	-	-	1,584,642	173,291	-	21,823	-	195,114
Retail Dealers	67,214	-	-	-	67,214	57,433	-	-	-	57,433	106	-	-	-	106	12,817	-	-	-	12,817
Storage	-	-	87,463	-	87,463	-	-	48,560	-	48,560	-	-	12,714	-	12,714	-	-	23,338	-	23,338
Bunker and Vessel Fuel	-	-	31,812	-	31,812	-	-	751	-	751	-	-	-	-	-	-	-	2,171	-	2,171
Export 6/	-	-	-	-	-	-	-	-	-	-	-	13,399	-	-	13,399	-	-	-	-	-
Use not Reported	2,858	-	-	190,702	193,560	-	-	-	34,837	34,837	7,616	-	-	320,970	328,586	-	-	-	39,775	39,775
District 7. Southern No. 1																				
Total	8,483,497	242,722	207,288	125,124	9,058,631	3,563,891	141,106	230,972	38,682	3,974,651	8,882,019	3,473,920	2,752,493	18,241	15,126,673	2,268,566	620,000	102,682	131	2,991,379
Railroad Fuel	39,030	-	-	-	39,030	21,466	-	-	-	21,466	669,118	-	-	-	669,118	55,934	-	-	-	55,934
Industrial	126,871	2,214	56	-	129,141	337,746	456	32,889	-	371,091	2,143,390	645,626	396,708	-	3,185,724	1,827,362	540,333	18,723	-	2,386,418
Retail Dealers	8,295,224	1,691	23,975	-	8,320,890	3,175,984	132,334	11,477	-	3,319,795	2,551,548	152,752	1,501	-	2,705,801	279,112	76,116	-	-	355,228
Byproduct and Water Gas 5/	3,535	1,139	2,443	-	7,117	22,238	-	11,448	-	33,686	3,268,461	1,308,943	2,349,192	-	6,926,596	98,818	1,077	83,959	-	183,854
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	157	-	180,814	-	180,971	-	-	175,158	-	175,158	711	-	5,092	-	5,803	7,340	-	-	-	7,340
Bunker and Vessel Fuel	-	41,780	-	-	41,780	-	6,043	-	-	6,043	-	428,751	-	-	428,751	-	774	-	-	774
Export 6/	-	183,633	-	-	183,633	-	1,956	-	-	1,956	-	859,412	-	-	859,412	-	1,700	-	-	1,700
Use not Reported	18,680	12,265	-	125,124	156,069	6,457	317	-	38,682	45,456	248,791	78,436	-	18,241	345,468	-	-	-	131	131
District 8. Southern No. 2																				
Total	22,178,277	548,762	2,283,657	634,022	25,644,718	6,525,844	92,950	770,968	103,768	7,493,530	25,720,531	3,583,825	8,198,304	202,179	37,704,839	17,652,697	426,408	3,529,309	53,830	21,662,244
Railroad Fuel	1,108,923	12,350	9,316	-	1,130,589	240,537	710	-	-	241,247	10,406,552	350,844	33,080	-	10,790,476	1,927,583	17,864	34,762	-	1,980,209
Industrial	3,161,573	42,546	344,031	-	3,548,150	1,740,423	1,272	94,591	-	1,836,286	6,630,329	148,818	1,666,963	-	8,446,110	11,946,000	7,373	2,119,748	-	14,073,121
Retail Dealers	16,865,825	1,593	251,015	-	17,118,433	4,333,866	6,600	98,574	-	4,439,040	383,078	282	12,921	-	396,281	2,138,592	2,562	53,161	-	2,194,315
Byproduct and Water Gas 5/	863,719	214,870	751,370	-	1,829,959	173,003	72,951	53,539	-	299,493	7,510,604	1,852,245	6,252,356	-	15,615,205	1,451,884	382,326	960,359	-	2,794,569
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	51,662	-	601,868	-	653,530	1,218	-	517,640	-	518,858	796	-	225,712	-	226,508	84,172	-	269,194	-	353,366
Bunker and Vessel Fuel	-	23,060	326,057	-	349,117	-	877	6,624	-	7,501	-	83,524	7,272	-	90,796	-	2,570	92,085	-	94,655
Export 6/	-	211,199	-	-	211,199	-	10,259	-	-	10,259	-	1,073,915	-	-	1,073,915	-	13,713	-	-	13,713
Use not Reported	126,575	43,144	-	634,022	803,741	36,797	281	-	103,768	140,846	789,172	74,197	-	202,179	1,065,548	104,466	-	-	53,830	158,296

TABLE 4.

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED MARCH 31, 1946, BY DISTRICT OF ORIGIN, USE, CONSOLIDATED SIZE GROUP, AND METHOD OF MOVEMENT AS REPORTED ON FORMS S.F.A. NOS. 38, 48, AND 56 AND CARGO MANIFESTS, INVOICES, AND SUMMARY REPORTS

(In net tons of 2,000 pounds)

14334

Size Group and Movement / District and Use	All Minus Resultant and Dedusted Screenings with Top Size not Exceeding 3/4" (5)					Total Columns 1 through 5 (6)					Size not Reported (7)					Other disposals, use and size not specified (8)	Coal used at mines 4/ (9)	Net change in inventory (10)	Grand total Columns 6 through 10 (11)
	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total				
District 1. Eastern Pennsylvania																			
Total	4,153,703	1,917,596	740,167	102,334	6,913,800	31,156,428	14,664,138	2,739,243	1,339,892	49,899,701	84,525	97,616	-	-	182,141	1,369	606,637	68,725	50,758,573
Railroad Fuel	189,407	-	-	-	189,407	7,088,882	-	31,852	-	7,120,734	53	-	-	-	53				
Industrial	3,465,021	1,904,723	485,163	-	5,854,907	17,090,190	10,889,391	1,642,479	-	29,622,060	-	9,616	-	-	9,616				
Retail Dealers	54,057	9,700	-	-	63,757	2,374,475	573,199	3,079	-	2,950,753	392	32,195	-	-	32,587				
Byproduct and Water Gas 5/	436,735	-	131,504	-	568,239	4,003,338	15,780	131,504	-	4,150,622	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	83,503	-	-	-	83,503				
Storage	7,800	-	123,500	-	131,300	7,800	-	924,310	-	932,110	-	-	-	-	-				
Bunker and Vessel Fuel	-	186	-	-	186	-	333,651	6,019	-	339,670	-	3,899	-	-	3,899				
Export 6/	-	2,987	-	-	2,987	-	2,836,362	-	-	2,836,362	-	51,906	-	-	51,906				
Use not Reported	683	-	-	102,334	103,017	591,743	15,755	-	1,339,892	1,947,390	577	-	-	-	577				
District 2. Western Pennsylvania																			
Total	1,531,145	54,831	94,470	199,055	1,879,501	61,263,847	1,346,924	6,459,257	4,203,034	73,273,062	19,610	14,201	7,914	14,552	56,277	4,325	397,268	37,372	73,768,304
Railroad Fuel	83,263	-	-	-	83,268	11,608,719	-	448,970	-	12,057,689	11,289	-	-	-	11,289				
Industrial	905,651	38,518	62,320	-	1,006,489	14,861,573	246,953	2,127,935	-	17,236,461	7,633	52	5,446	-	13,331				
Retail Dealers	9,208	280	-	-	9,488	2,505,099	35,414	38,414	-	2,578,927	-	10,738	-	-	10,738				
Byproduct and Water Gas 5/	509,159	-	4,638	-	513,797	31,030,231	49,064	2,488,675	-	33,567,970	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	488	-	-	-	488				
Storage	-	-	27,512	-	27,512	11,460	-	1,021,174	-	1,032,634	-	-	721	-	721				
Bunker and Vessel Fuel	-	-	-	-	-	-	10,619	334,089	-	344,708	-	-	1,747	-	1,747				
Export 6/	-	16,033	-	-	16,033	-	1,001,668	-	-	1,001,668	-	3,411	-	-	3,411				
Use not Reported	23,859	-	-	199,055	222,914	1,246,765	3,206	-	4,203,034	5,453,005	-	-	-	14,552	14,552				
District 3. Northern West Virginia 7/																			
Total	3,301,038	560,155	690,000	8,158	4,559,351	34,456,496	2,916,086	4,038,608	198,582	41,609,772	3,976	25,766	2,430	-	32,172	304	115,015	60,202	41,817,465
Railroad Fuel	97,531	-	249	-	97,780	13,582,972	-	281,145	-	13,864,117	-	-	-	-	-				
Industrial	2,940,905	482,047	542,140	-	3,965,092	12,471,437	1,578,194	1,784,294	-	15,833,925	3,600	296	-	-	3,896				
Retail Dealers	45,976	17,131	-	-	63,107	2,951,509	80,899	-	-	3,032,408	-	23,740	-	-	23,740				
Byproduct and Water Gas 5/	214,246	60,343	9,415	-	284,004	5,230,809	275,646	394,976	-	5,901,431	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	376	-	-	-	376				
Storage	-	-	137,537	-	137,537	58,152	-	1,512,770	-	1,570,922	-	-	2,387	-	2,387				
Bunker and Vessel Fuel	-	634	659	-	1,293	-	195,292	65,423	-	260,715	-	1,730	43	-	1,773				
Export 6/	-	-	-	-	-	-	761,536	-	-	761,536	-	-	-	-	-				
Use not Reported	2,380	-	-	8,158	10,538	161,617	24,519	-	198,582	384,718	-	-	-	-	-				
District 4. Ohio																			
Total	1,671,890	-	111,069	144,014	1,926,973	22,721,665	-	2,573,886	4,611,602	29,907,153	602,261	-	22,720	8,538	633,519	-	89,385	44,223	30,674,280
Railroad Fuel	32,351	-	2,364	-	34,715	10,531,183	-	1,526,057	-	12,057,240	934	-	-	-	934				
Industrial	1,613,941	-	87,042	-	1,700,983	9,565,136	-	295,873	-	9,861,009	595,726	-	20,136	-	615,862				
Retail Dealers	18,326	-	-	-	18,326	2,510,846	-	13,056	-	2,523,902	4,153	-	-	-	4,153				
Byproduct and Water Gas	6,052	-	-	-	6,052	12,187	-	117	-	12,304	-	-	-	-	-				
Storage	-	-	20,843	-	20,843	-	-	303,309	-	303,309	-	-	969	-	969				
Bunker and Vessel Fuel	-	-	820	-	820	-	-	435,474	-	435,474	-	-	1,615	-	1,615				
Use not Reported	1,220	-	-	144,014	145,234	102,313	-	-	4,611,602	4,713,915	1,448	-	-	8,538	9,986				
District 5. Michigan																			
Total	-	-	-	-	-	42,089	-	-	60,580	102,669	-	-	-	-	-	-	9,890	-444	112,115
Railroad Fuel	-	-	-	-	-	1,676	-	-	-	1,676	-	-	-	-	-				
Industrial	-	-	-	-	-	16,550	-	-	-	16,550	-	-	-	-	-				
Retail Dealers	-	-	-	-	-	23,863	-	-	-	23,863	-	-	-	-	-				
Use not Reported	-	-	-	-	-	-	-	-	60,580	60,580	-	-	-	-	-				
District 6. Panhandle																			
Total	180,880	-	41,542	11,542	233,964	3,534,574	13,399	357,174	597,826	4,502,973	-	-	528	415	943	-	5,099	14,051	4,523,066
Railroad Fuel	14,380	-	-	-	14,380	1,236,830	-	83,458	-	1,320,288	-	-	-	-	-				
Industrial	161,938	-	2,295	-	164,233	2,145,138	-	27,660	-	2,172,798	-	-	-	-	-				
Retail Dealers	2,306	-	715	-	3,021	139,876	-	715	-	140,591	-	-	-	-	-				
Storage	-	-	38,532	-	38,532	-	-	210,607	-	210,607	-	-	-	-	-				
Bunker and Vessel	-	-	-	-	-	-	-	34,734	-	34,734	-	-	528	-	528				
Export 6/	-	-	-	-	-	-	13,399	-	-	13,399	-	-	-	-	-				
Use not Reported	2,256	-	-	11,542	13,798	12,730	-	-	597,826	610,556	-	-	-	415	415				
District 7. Southern No. 1																			
Total	6,923,015	3,239,238	3,147,879	4,118	13,364,250	30,120,988	7,766,986	6,441,314	186,296	44,515,584	240,788	95,144	14,475	-	350,407	1,619	794,551	199,764	45,861,925
Railroad Fuel	81,531	-	58	-	81,589	867,079	-	58	-	867,137	62,536	-	-	-	62,536				
Industrial	2,861,280	2,283,774	447,009	-	5,592,063	7,296,649	3,472,403	895,385	-	11,664,437	158,638	451	-	-	159,089				
Retail Dealers	228,372	13,770	-	-	242,142	14,530,240	376,663	36,953	-	14,943,856	321	-	-	-	321				
Byproduct and Water Gas 5/	3,750,403	909,328	2,696,621	-	7,356,352	7,143,455	2,220,487	5,143,663	-	14,507,605	54	-	14,475	-	14,529				
Smithing	-	-	-	-	-	-	-	-	-	-	19,239	-	-	-	19,239				
Storage	1,429	-	1,446	-	2,875	9,637	-	362,510	-	372,147	-	-	-	-	-				
Bunker and Vessel Fuel	-	74,643	2,745	-	77,388	-	551,991	2,745	-	554,736	-	1,738	-	-	1,738				
Export 6/	-	7,671	-	-	7,671	-	1,054,372	-	-	1,054,372	-	90,669	-	-	90,669				
Use not Reported	-	52	-	4,118	4,170	273,928	91,070	-	186,296	551,294	-	2,286	-	-	2,286				
District 8. Southern No. 2																			
Total	5,038,097	205,257	414,277	15,395	5,673,026	77,115,446	4,857,202	15,196,515	1,009,194	98,178,357	300,381	103,071	9,224	24,718	437,394	14,150	882,457	307,120	99,819,478
Railroad Fuel	118,039	6,396	-	-	124,435	13,801,634	388,164	77,158	-	14,266,956	37,819	61,509	-	-	99,328				
Industrial	4,287,877	68,351	278,675	-	4,634,903	27,766,202	268,360	4,504,008	-	32,538,570	223,102	-	-	-	223,102				
Retail Dealers	24,757	2,695	-	-	27,452	23,746,118	13,732	415,671	-	24,175,521	32,135	-	9,019	-	41,154				
Byproduct and Water Gas 5/	585,796	77,243	126,733	-	789,772	10,585,006	2,599,635	8,144,357	-	21,328,998	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	3,081	-	-	-	3,081				
Storage	1,521	-	5,900	-	7,421	139,369	-	1,620,314	-	1,759,683	643	-	-	-	643				
Bunker and Vessel Fuel	-	-	2,969	-	2,969	-	110,031	435,007	-	545,038	-	106	205	-	311				
Export 6/	-	50,572	-	-	50,572	-	1,359,658	-	-	1,359,658	-	41,456	-	-	41,456				
Use not Reported	20,107	-	-	15,395	35,502	1,077,117	117,622	-	1,009,194	2,203,933	3,601	-	-	24,71[illegible]	28,319				

TABLE 4.

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED MARCH 31, 1946 (Continued)

Size Group and Movement / District and Use	All Lump Coal and All Double Screened Coal with Top Size over 2" (1)					All Double Screened Coal with Top Size not Exceeding 2" (2)					M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size over 2" (3)					All Minus Resultant and Dedusted Screenings with Top Size over 3/4" and not Exceeding 2" (4)				
	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total
District 9. West Kentucky																				
Total	4,181,186	29,853	121,581	480,612	4,813,232	1,174,376	25,248	-	26,703	1,226,327	7,121,376	1,377,801	394,328	38,051	8,931,556	3,299,007	-	25,938	59,422	3,384,367
Railroad Fuel	1,141,225	-	121,581	-	1,262,806	47,543	-	-	-	47,543	5,960,626	-	363,530	-	6,324,156	153,305	-	11,293	-	164,598
Industrial	832,513	-	-	-	832,513	299,881	-	-	-	299,881	854,670	-	30,798	-	885,468	2,421,831	-	14,645	-	2,436,476
Retail Dealers	2,206,133	-	-	-	2,206,133	818,194	-	-	-	818,194	206,096	-	-	-	206,096	716,642	-	-	-	716,642
Export 6/	-	29,853	-	-	29,853	-	25,248	-	-	25,248	-	1,377,801	-	-	1,377,801	-	-	-	-	-
Use not Reported	1,315	-	-	480,612	481,927	8,758	-	-	26,703	35,461	99,984	-	-	38,051	138,035	7,229	-	-	59,422	66,651
District 10. Illinois																				
Total	18,910,815	181,348	16,481	2,980,105	22,088,749	2,878,539	15,188	7,295	745,682	3,646,704	16,575,830	3,054	64,024	45,095	16,688,003	22,487,075	-	67,546	1,718,272	24,272,893
Railroad Fuel	10,043,861	-	716	-	10,044,577	259,811	-	-	-	259,811	11,084,428	-	64,024	-	11,148,452	1,902,655	-	-	-	1,902,655
Industrial	1,316,316	-	1,337	-	1,317,653	1,115,884	-	4,293	-	1,120,177	5,452,443	-	-	-	5,452,443	16,092,369	-	65,299	-	16,157,668
Retail Dealers	7,501,793	-	680	-	7,502,473	1,309,904	-	2,105	-	1,312,009	9,903	-	-	-	9,903	4,405,190	-	2,247	-	4,407,437
Byproduct and Water Gas	1,481	-	13,748	-	15,229	192,538	-	897	-	193,435	-	-	-	-	-	59,122	-	-	-	59,122
Bunker and Vessel Fuel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Export 6/	-	181,348	-	-	181,348	-	15,188	-	-	15,188	-	3,054	-	-	3,054	-	-	-	-	-
Use not Reported	47,364	-	-	2,980,105	3,027,469	402	-	-	745,682	746,084	29,056	-	-	45,095	74,151	27,739	-	-	1,718,272	1,746,011
District 11. Indiana																				
Total	9,269,680	-	-	864,853	10,134,533	2,055,958	-	-	199,148	2,255,106	1,409,131	-	-	160,165	1,569,296	8,221,346	-	-	406,623	8,627,969
Railroad Fuel	6,320,363	-	-	-	6,320,363	85,644	-	-	-	85,644	1,352,589	-	-	-	1,352,589	320,579	-	-	-	320,579
Industrial	825,233	-	-	-	825,233	1,207,561	-	-	-	1,207,561	54,723	-	-	-	54,723	7,394,566	-	-	-	7,394,566
Retail Dealers	2,027,768	-	-	-	2,027,768	757,686	-	-	-	757,686	1,588	-	-	-	1,588	453,116	-	-	-	453,116
Byproduct and Water Gas	84,156	-	-	-	84,156	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use not Reported	12,160	-	-	864,853	877,013	5,067	-	-	199,148	204,215	231	-	-	160,165	160,396	53,085	-	-	406,623	459,708
District 12. Iowa																				
Total	267,613	-	-	240,310	507,923	19,449	-	-	27,617	47,066	11,229	-	-	32,819	44,048	592,569	-	-	774,469	770,038
Railroad Fuel	162,981	-	-	-	162,981	8,006	-	-	-	8,006	-	-	-	-	-	18,098	-	-	-	18,098
Industrial	9,223	-	-	-	9,223	6,772	-	-	-	6,772	4,521	-	-	-	4,521	555,949	-	-	-	555,949
Retail Dealers	95,409	-	-	-	95,409	3,856	-	-	-	3,856	6,708	-	-	-	6,708	18,370	-	-	-	18,370
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-	100
Use not Reported	-	-	-	240,310	240,310	815	-	-	27,617	28,432	-	-	-	32,819	32,819	52	-	-	177,469	177,521
District 13. Southeastern																				
Total	1,446,775	18,758	-	192,694	1,658,227	332,019	675	-	14,631	347,325	5,947,747	743,066	-	157,317	6,848,130	7,808,356	89,483	-	16,736	7,914,575
Railroad Fuel	9,316	-	-	-	9,316	2,336	-	-	-	2,336	3,735,715	-	-	-	3,735,715	61,104	-	-	-	61,104
Industrial	456,572	-	-	-	456,572	135,308	-	-	-	135,308	1,002,339	-	-	-	1,002,339	1,486,020	-	-	-	1,486,020
Retail Dealers	980,338	-	-	-	980,338	193,761	-	-	-	193,761	20,933	-	-	-	20,933	74,598	-	-	-	74,598
Byproduct and Water Gas 5/	549	-	-	-	549	614	-	-	-	614	1,187,385	-	-	-	1,187,385	6,186,634	-	-	-	6,186,634
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bunker and Vessel Fuel	-	405	-	-	405	-	-	-	-	-	-	29,905	-	-	29,905	-	28,892	-	-	28,892
Export 6/	-	18,353	-	-	18,353	-	675	-	-	675	-	713,161	-	-	713,161	-	60,591	-	-	60,591
Use not Reported	-	-	-	192,694	192,694	-	-	-	14,631	14,631	1,375	-	-	157,317	158,692	-	-	-	16,736	16,736
District 14. Arkansas-Oklahoma																				
Total	951,253	-	-	8,724	959,977	67,498	-	-	501	67,999	365,355	344	-	2,611	368,310	148,403	-	-	-	148,403
Railroad Fuel	2,597	-	-	-	2,597	1,284	-	-	-	1,284	70,110	-	-	-	70,110	2,221	-	-	-	2,221
Industrial	15,989	-	-	-	15,989	8,882	-	-	-	8,882	127,634	-	-	-	127,634	76,489	-	-	-	76,489
Retail Dealers	924,471	-	-	-	924,471	55,323	-	-	-	55,323	122,438	-	-	-	122,438	65,488	-	-	-	65,488
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	43,973	-	-	-	43,973	4,205	-	-	-	4,205
Export 6/	-	-	-	-	-	-	-	-	-	-	-	344	-	-	344	-	-	-	-	-
Use not Reported	8,196	-	-	8,724	16,920	2,009	-	-	501	2,510	1,200	-	-	2,611	3,811	-	-	-	-	-
District 15. Southwestern																				
Total	3,245,911	20,628	-	485,455	3,751,994	605,299	5,932	-	59,259	670,490	1,424,628 8/	222,461	-	131,628 8/	1,778,717 8/	2,641,229	-	-	133,765	2,774,994
Railroad Fuel	1,042,284	-	-	-	1,042,284	37,730	-	-	-	37,730	895,435 8/	-	-	-	895,435 8/	60,642	-	-	-	60,642
Industrial	415,744	-	-	-	415,744	116,676	-	-	-	116,676	387,907 8/	-	-	-	387,907 8/	2,246,726	-	-	-	2,246,726
Retail Dealers	1,764,485	-	-	-	1,764,485	450,893	-	-	-	450,893	36,952	-	-	-	36,952	330,215	-	-	-	330,215
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	78,184	-	-	-	78,184	-	-	-	-	-
Export 6/	-	20,628	-	-	20,628	-	5,932	-	-	5,932	-	222,461	-	-	222,461	-	-	-	-	-
Use not Reported	23,398	-	-	485,455	508,853	-	-	-	59,259	59,259	26,150	-	-	131,628 8/	157,778 8/	3,646	-	-	133,765	137,411
District 16. Northern Colorado																				
Total	446,717	-	-	368,872	815,589	77,776	-	-	141,791	219,567	16,501	-	-	10,407	26,908	788,533	-	-	210,206	998,739
Railroad Fuel	56,395	-	-	-	56,395	-	-	-	-	-	28	-	-	-	28	28,745	-	-	-	28,745
Industrial	51,253	-	-	-	51,253	10,308	-	-	-	10,308	16,391	-	-	-	16,391	576,957	-	-	-	576,957
Retail Dealers	339,038	-	-	-	339,038	67,468	-	-	-	67,468	82	-	-	-	82	182,831	-	-	-	182,831
Use not Reported	31	-	-	368,872	368,903	-	-	-	141,791	141,791	-	-	-	10,407	10,407	-	-	-	210,206	210,206
District 17. Southern Colorado																				
Total	1,547,448	30,509	-	263,698	1,841,655	94,597	7,812	-	27,790	130,199	1,693,018	93,527	-	5,786	1,792,331	1,540,734	-	-	116,340	1,657,074
Railroad Fuel	56,795	-	-	-	56,795	14,176	-	-	-	14,176	1,533,457	-	-	-	1,533,457	263,770	-	-	-	263,770
Industrial	139,626	-	-	-	139,626	14,979	-	-	-	14,979	19,651	-	-	-	19,651	250,918	-	-	-	250,918
Retail Dealers	1,238,791	-	-	-	1,238,791	61,249	-	-	-	61,249	716	-	-	-	716	270,716	-	-	-	270,716
Byproduct and Water Gas 5/	94,922	-	-	-	94,922	3,904	-	-	-	3,904	139,194	-	-	-	139,194	752,705	-	-	-	752,705
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Export 6/	-	30,509	-	-	30,509	-	7,812	-	-	7,812	-	93,527	-	-	93,527	-	-	-	-	-
Use not Reported	17,314	-	-	263,698	281,012	289	-	-	27,790	28,079	-	-	-	5,786	5,786	2,625	-	-	116,340	118,965
District 18. New Mexico																				
Total	116,346	-	-	20,316	136,662	17,204	-	-	4,500	21,704	2,530	-	-	2,125	4,655	68,680	-	-	34	68,714
Railroad Fuel	49,237	-	-	-	49,237	-	-	-	-	-	-	-	-	-	-	36,987	-	-	-	36,987
Industrial	13,594	-	-	-	13,594	6,647	-	-	-	6,647	-	-	-	-	-	29,609	-	-	-	29,609
Retail Dealers	53,515	-	-	-	53,515	10,557	-	-	-	10,557	2,530	-	-	-	2,530	2,084	-	-	-	2,084
Use not Reported	-	-	-	20,316	20,316	-	-	-	4,500	4,500	-	-	-	2,125	2,125	-	-	-	34	34

TABLE 4

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDING MARCH 31, 1946 (Continued)

Size Group and Movement / District and Use	All Minus Resultant and Deducted Screenings with Top Size not Exceeding 3/4" (5)					Total Columns 1 through 5 (6)					Size not Reported (7)					Other disposals, use and size not specified (8)	Coal used at mines 4/ (9)	Net change in inventory (10)	Grand total Columns 6 through 10 (11)
	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total				
District 9. West Kentucky																			
Total	398,812	-	-	11,996	410,808	16,174,757	1,432,902	541,847	616,784	18,766,290	-	-	17,724	-	17,724	-	89,493	56,985	18,930,492
Railroad Fuel	59,136	-	-	-	59,136	7,361,835	-	496,404	-	7,858,239	-	-	17,724	-	17,724				
Industrial	313,221	-	-	-	313,221	4,722,116	-	45,443	-	4,767,559	-	-	-	-	-				
Retail Dealers	8,319	-	-	-	8,319	3,955,384	-	-	-	3,955,384	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	1,432,902	-	-	1,432,902	-	-	-	-	-				
Use not Reported	18,136	-	-	11,996	30,132	135,422	-	-	616,784	752,206	-	-	-	-	-				
District 10. Illinois																			
Total	3,379,987	-	-	176,361	3,556,348	64,232,246	199,590	155,346	5,665,515	70,252,697	1,650	23,503	13,386	23,856	62,395	1,161	1,076,096	164,974	71,557,323
Railroad Fuel	91,346	-	-	-	91,346	23,382,101	-	64,740	-	23,446,841	384	-	13,386	-	13,770				
Industrial	2,615,049	-	-	-	2,615,049	26,592,061	-	70,929	-	26,662,990	1,216	-	-	-	1,216				
Retail Dealers	643,898	-	-	-	643,898	13,870,688	-	5,032	-	13,875,720	50	-	-	-	50				
Byproduct and Water Gas	-	-	-	-	-	253,141	-	14,645	-	267,786	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-		-	-	-	-	-	-	12,211	-	-	12,211				
Export 6/	-	-	-	-	-	-	199,590	-	-	199,590	-	11,292	-	-	11,292				
Use not Reported	29,694	-	-	176,361	206,055	134,255	-	-	5,665,515	5,799,770	-	-	-	23,856	23,856				
District 11. Indiana																			
Total	1,200,826	-	-	37,124	1,237,950	22,156,941	-	-	1,667,913	23,824,854	112,240	-	-	25,037	137,277	-	148,202	83,303	24,193,636
Railroad Fuel	64	-	-	-	64	8,079,239	-	-	-	8,079,239	4,904	-	-	-	4,904				
Industrial	1,168,091	-	-	-	1,168,091	10,650,174	-	-	-	10,650,174	101,278	-	-	-	101,278				
Retail Dealers	27,104	-	-	-	27,104	3,267,262	-	-	-	3,267,262	6,058	-	-	-	6,058				
Byproduct and Water Gas	62	-	-	-	62	84,218	-	-	-	84,218	-	-	-	-	-				
Use not Reported	5,505	-	-	37,124	42,629	76,048	-	-	1,667,913	1,743,961	-	-	-	25,037	25,037				
District 12. Iowa																			
Total	-	-	-	2,323	2,323	890,860	-	-	480,538	1,371,398	4,554	-	-	5,306	9,860	-	15,222	2,952	1,399,432
Railroad Fuel	-	-	-	-	-	189,085	-	-	-	189,085	-	-	-	-	-				
Industrial	-	-	-	-	-	576,465	-	-	-	576,465	2,537	-	-	-	2,537				
Retail Dealers	-	-	-	-	-	124,343	-	-	-	124,343	2,017	-	-	-	2,017				
Byproduct and Water Gas	-	-	-	-	-	100	-	-	-	100	-	-	-	-	-				
Use not Reported	-	-	-	2,323	2,323	867	-	-	480,538	481,405	-	-	-	5,306	5,306				
District 13. Southeastern																			
Total	54,997	-	-	17,322	72,319	15,589,894	851,982	-	398,700	16,840,576	31,564	391	-	-	31,955	-	190,663	113,716	17,176,910
Railroad Fuel	-	-	-	-	-	3,808,471	-	-	-	3,808,471	-	-	-	-	-				
Industrial	53,430	-	-	-	53,430	3,133,669	-	-	-	3,133,669	6,832	-	-	-	6,832				
Retail Dealers	1,567	-	-	-	1,567	1,271,197	-	-	-	1,271,197	-	-	-	-	-				
Byproduct and Water Gas 5/	-	-	-	-	-	7,375,182	-	-	-	7,375,182	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	24,732	-	-	-	24,732				
Bunker and Vessel Fuel	-	-	-	-	-	-	59,202	-	-	59,202	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	792,780	-	-	792,780	-	391	-	-	391				
Use not Reported	-	-	-	17,322	17,322	1,375	-	-	398,700	400,075	-	-	-	-	-				
District 14. Arkansas-Oklahoma																			
Total	160,956	-	-	-	160,956	1,693,465	344	-	11,836	1,705,645	66,816	-	-	35	66,851	-	8,578	4,047	1,785,121
Railroad Fuel	5,074	-	-	-	5,074	81,286	-	-	-	81,286	47,182	-	-	-	47,182				
Industrial	78,526	-	-	-	78,526	307,520	-	-	-	307,520	15,344	-	-	-	15,344				
Retail Dealers	76,903	-	-	-	76,903	1,244,623	-	-	-	1,244,623	3,691	-	-	-	3,691				
Byproduct and Water Gas	-	-	-	-	-	48,178	-	-	-	48,178	599	-	-	-	599				
Export 6/	-	-	-	-	-	-	344	-	-	344	-	-	-	-	-				
Use not Reported	453	-	-	-	453	11,858	-	-	11,836	23,694	-	-	-	35	35				
District 15. Southwestern																			
Total	520	-	-	12,505	13,025	7,917,587	249,021	-	822,612	8,989,220	8,952	-	-	1,297	10,249	655	27,739	13,013	9,040,876
Railroad Fuel	-	-	-	-	-	2,036,091	-	-	-	2,036,091	2,617	-	-	-	2,617				
Industrial	520	-	-	-	520	3,167,573	-	-	-	3,167,573	1,456	-	-	-	1,456				
Retail Dealers	-	-	-	-	-	2,582,545	-	-	-	2,582,545	4,879	-	-	-	4,879				
Byproduct and Water Gas	-	-	-	-	-	78,184	-	-	-	78,184	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	249,021	-	-	249,021	-	-	-	-	-				
Use not Reported	-	-	-	12,505	12,505	53,194	-	-	822,612	875,806	-	-	-	1,297	1,297				
District 16. Northern Colorado																			
Total	136,435	-	-	19,369	155,804	1,465,962	-	-	750,645	2,216,607	-	-	-	-	-	-	55,016	634	2,272,257
Railroad Fuel	-	-	-	-	-	85,168	-	-	-	85,168	-	-	-	-	-				
Industrial	124,666	-	-	-	124,666	779,575	-	-	-	779,575	-	-	-	-	-				
Retail Dealers	11,769	-	-	-	11,769	601,188	-	-	-	601,188	-	-	-	-	-				
Use not Reported	-	-	-	19,369	19,369	31	-	-	750,645	750,676	-	-	-	-	-				
District 17. Southern Colorado																			
Total	126,720	-	-	9,204	135,924	5,002,517	131,848	-	422,818	5,557,183	16,466	-	-	7,679	24,145	-	111,131	21,678	5,714,137
Railroad Fuel	12,056	-	-	-	12,056	1,880,254	-	-	-	1,880,254	95	-	-	-	95				
Industrial	33,143	-	-	-	33,143	458,317	-	-	-	458,317	14,960	-	-	-	14,960				
Retail Dealers	776	-	-	-	776	1,572,248	-	-	-	1,572,248	464	-	-	-	464				
Byproduct and Water Gas 5/	80,745	-	-	-	80,745	1,071,470	-	-	-	1,071,470	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	947	-	-	-	947				
Export 6/	-	-	-	-	-	-	131,848	-	-	131,848	-	-	-	-	-				
Use not Reported	-	-	-	9,204	9,204	20,228	-	-	422,818	443,046	-	-	-	7,679	7,679				
District 18. New Mexico																			
Total	7,927	-	-	-	7,927	212,687	-	-	26,975	239,662	-	-	-	-	-	-	12,666	2,369	254,697
Railroad Fuel	7,287	-	-	-	7,287	93,511	-	-	-	93,511	-	-	-	-	-				
Industrial	640	-	-	-	640	50,490	-	-	-	50,490	-	-	-	-	-				
Retail Dealers	-	-	-	-	-	68,686	-	-	-	68,686	-	-	-	-	-				
Use not Reported	-	-	-	-	-	-	-	-	26,975	26,975	-	-	-	-	-				

TABLE 4

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED MARCH 31, 1946 (Continued)

14336

Size Group and Movement / District and Use	All Lump Coal and All Double Screened Coal with Top Size over 2" (1)					All Double Screened Coal with Top Size not Exceeding 2" (2)					M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size over 2" (3)					All Minus Resultant and Dedusted Screenings with Top Size over 3/4" and not Exceeding 2" (4)				
	All-Rail, River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/		Truck 3/	Total
		Tidewater	Lake				Tidewater	Lake				Tidewater	Lake				Tidewater	Lake		
District 19. Wyoming																				
Total	1,272,549	-	-	66,643	1,339,192	163,443	97	-	9,206	172,746	6,485,002	28,013	-	1,057	6,514,072	1,556,423	-	-	7,633	1,564,056
Railroad Fuel	375,254	-	-	-	375,254	40,337	-	-	-	40,337	6,389,904	-	-	-	6,389,904	359,124	-	-	-	359,124
Industrial	231,717	-	-	-	231,717	24,548	-	-	-	24,548	85,473	-	-	-	85,473	911,068	-	-	-	911,068
Retail Dealers	617,442	-	-	-	617,442	95,740	-	-	-	95,740	160	-	-	-	160	251,803	-	-	-	251,803
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bunker and Vessel Fuel	-	-	-	-	-	-	97	-	-	97	-	-	-	-	-	-	-	-	-	-
Export 6/	-	-	-	-	-	-	-	-	-	-	-	28,013	-	-	28,013	-	-	-	-	-
Use not Reported	48,136	-	-	66,643	114,779	2,818	-	-	9,206	12,024	9,465	-	-	1,057	10,522	34,428	-	-	7,633	42,061
District 20. Utah																				
Total	2,062,911	4,321	-	129,603	2,196,835	214,723	406	-	398	215,527	2,045,694	27,172	-	60	2,072,926	1,855,454	-	-	43,179	1,898,633
Railroad Fuel	69,954	-	-	-	69,954	20,588	-	-	-	20,588	660,697	-	-	-	660,697	275,927	-	-	-	275,927
Industrial	233,890	4,291	-	-	238,181	15,953	223	-	-	16,176	82,380	-	-	-	82,380	710,879	-	-	-	710,879
Retail Dealers	1,666,786	-	-	-	1,666,786	116,302	-	-	-	116,302	14,504	-	-	-	14,504	844,661	-	-	-	844,661
Byproduct and Water Gas 5/	17,700	-	-	-	17,700	61,880	-	-	-	61,880	1,272,007	-	-	-	1,272,007	-	-	-	-	-
Bunker and Vessel Fuel	-	30	-	-	30	-	183	-	-	183	-	1,111	-	-	1,111	-	-	-	-	-
Export 6/	-	-	-	-	-	-	-	-	-	-	-	26,061	-	-	26,061	-	-	-	-	-
Use not Reported	74,581	-	-	129,603	204,184	-	-	-	398	398	16,106	-	-	60	16,166	23,987	-	-	43,179	67,166
District 21. North and South Dakota																				
Total	874,322	-	-	70,598	944,920	221,573	-	-	8,399	229,972	8/ 558,461	-	-	8/ 31,095	8/ 589,556	9/ 438,415	-	-	-	9/ 438,415
Railroad Fuel	19,484	-	-	-	19,484	1,660	-	-	-	1,660	8/ 63,034	-	-	-	8/ 63,034	9/ 34,107	-	-	-	9/ 34,107
Industrial	41,243	-	-	-	41,243	53,380	-	-	-	53,380	8/ 487,673	-	-	-	8/ 487,673	9/ 404,177	-	-	-	9/ 404,177
Retail Dealers	813,595	-	-	-	813,595	166,533	-	-	-	166,533	8/ 7,754	-	-	-	8/ 7,754	9/ 131	-	-	-	9/ 131
Use not Reported	-	-	-	70,598	70,598	-	-	-	8,399	8,399	-	-	-	8/ 31,095	8/ 31,095	-	-	-	-	-
District 22. Montana																				
Total	424,589	-	-	34,183	458,772	134,059	-	-	5,406	139,465	3,211,500	-	-	-	3,211,500	266,889	-	-	2,643	269,532
Railroad Fuel	19,897	-	-	-	19,897	191	-	-	-	191	3,190,032	-	-	-	3,190,032	113,446	-	-	-	113,446
Industrial	115,667	-	-	-	115,667	28,416	-	-	-	28,416	21,468	-	-	-	21,468	125,205	-	-	-	125,205
Retail Dealers	289,025	-	-	-	289,025	105,452	-	-	-	105,452	-	-	-	-	-	17,077	-	-	-	17,077
Use not Reported	-	-	-	34,183	34,183	-	-	-	5,406	5,406	-	-	-	-	-	11,161	-	-	2,643	13,804
District 23. Washington and Alaska																				
Total	102,078	1,502	-	118,275	221,855	137,822	318	-	136,248	274,388	412,127	-	-	655	412,782	174,082	-	-	4,534	178,616
Railroad Fuel	1,822	-	-	-	1,822	189	-	-	-	189	373,801	-	-	-	373,801	25,570	-	-	-	25,570
Industrial	65,925	-	-	-	65,925	84,677	318	-	-	84,995	37,628	-	-	-	37,628	122,888	-	-	-	122,888
Retail Dealers	27,168	-	-	-	27,168	46,213	-	-	-	46,213	698	-	-	-	698	10,992	-	-	-	10,992
Byproduct and Water Gas	4,125	-	-	-	4,125	3,392	-	-	-	3,392	-	-	-	-	-	14,632	-	-	-	14,632
Storage	2,993	-	-	-	2,993	3,248	-	-	-	3,248	-	-	-	-	-	-	-	-	-	-
Bunker and Vessel Fuel	-	1,502	-	-	1,502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use not Reported	45	-	-	118,275	118,320	103	-	-	136,248	136,351	-	-	-	655	655	-	-	-	4,534	4,534
Total (excluding ex-dock movement)																				
Total	89,545,717	1,450,199	5,070,718	10,467,937	106,534,571	29,632,600	939,497	2,626,703	2,446,342	35,645,142	185,979,858	24,478,023	19,941,789	5,490,733	235,890,403	84,935,442	1,597,455	5,624,576	4,565,325	96,722,798
Railroad Fuel	24,436,881	12,350	709,087	-	25,158,318	3,569,863	710	180,527	-	3,751,100	82,397,990	350,844	2,063,263	-	84,812,097	6,554,830	17,864	54,294	-	6,626,988
Industrial	11,731,221	75,989	462,072	-	12,269,282	10,363,752	326,275	471,270	-	11,161,297	45,820,193	10,309,639	5,654,857	-	61,784,689	56,996,025	970,817	2,901,163	-	60,868,005
Retail Dealers	51,142,999	69,951	288,519	-	51,501,469	14,494,474	357,715	125,023	-	14,977,212	4,892,234	521,750	15,702	-	5,429,686	10,749,181	86,915	82,961	-	10,919,057
Byproduct and Water Gas 5/	1,702,883	227,559	1,013,993	-	2,944,435	1,111,454	87,613	128,797	-	1,327,864	49,788,226	3,386,068	10,724,547	-	63,898,841	10,103,474	412,458	1,481,689	-	11,997,621
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	74,477	-	1,568,726	-	1,643,203	4,501	-	1,665,586	-	1,670,087	25,539	-	1,456,654	-	1,482,193	117,392	-	908,758	-	1,026,150
Bunker and Vessel Fuel	-	185,689	1,028,321	-	1,214,010	-	50,663	55,500	-	106,163	-	919,658	26,766	-	946,424	-	32,236	195,711	-	227,947
Export 6/	-	813,694	-	-	813,694	-	113,488	-	-	113,488	-	8,805,944	-	-	8,805,944	-	77,165	-	-	77,165
Use not Reported	457,256	64,967	-	10,467,937	10,990,160	88,556	3,033	-	2,446,342	2,537,931	3,055,676	184,120	-	5,490,733	8,730,529	414,540	-	-	4,565,325	4,979,865
Tidewater - ex-dock movement 11/																				
Total	-	-	-	-	135,592	-	-	-	-	1,708,675	-	-	-	-	3,646,842	-	-	-	-	9/ 3,028,042
Railroad Fuel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,432	-	-	-	-	9/ 38,163
Industrial	-	-	-	-	38,657	-	-	-	-	564,409	-	-	-	-	1,185,868	-	-	-	-	9/ 1,487,877
Retail Dealers	-	-	-	-	92,417	-	-	-	-	1,138,254	-	-	-	-	1,185,586	-	-	-	-	9/ 1,162,767
Byproduct and Water Gas	-	-	-	-	4,240	-	-	-	-	5,271	-	-	-	-	1,250,673	-	-	-	-	9/ 336,215
Smithing	-	-	-	-	245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9/ -
Bunker and Vessel Fuel	-	-	-	-	33	-	-	-	-	741	-	-	-	-	20,283	-	-	-	-	9/ 3,020
Lake - ex-dock movement 11/																				
Total	-	-	-	-	3,679,511	-	-	-	-	2,134,314	-	-	-	-	3,315,473	-	-	-	-	9/ 6,860,078
Railroad Fuel	-	-	-	-	36,254	-	-	-	-	4,918	-	-	-	-	1,896,003	-	-	-	-	9/ 230,587
Industrial	-	-	-	-	408,254	-	-	-	-	376,276	-	-	-	-	202,394	-	-	-	-	9/ 3,421,252
Retail Dealers	-	-	-	-	2,960,983	-	-	-	-	1,655,922	-	-	-	-	251,031	-	-	-	-	9/ 2,386,341
Byproduct and Water Gas	-	-	-	-	16,369	-	-	-	-	14	-	-	-	-	34,550	-	-	-	-	9/ 622,182
Smithing	-	-	-	-	44	-	-	-	-	268	-	-	-	-	3,204	-	-	-	-	9/ 450
Bunker and Vessel Fuel	-	-	-	-	257,607	-	-	-	-	96,916	-	-	-	-	928,291	-	-	-	-	9/ 199,266
GRAND TOTAL	-	-	-	-	110,349,674	-	-	-	-	39,488,131	-	-	-	-	242,852,718	-	-	-	-	106,610,918

1/ Includes shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use as follows: District 2, 988,467 tons; District 3, 19,176 tons; District 8, 8,625 tons; District 10, 57,881 tons; District 13, 7 tons; District 19, 7 tons; District 23, 2,959 tons.

2/ Includes shipments via tidewater to alongside consumers and via Great Lakes to alongside consumers and for consignment to Canada.

3/ Truck data not reported by use.

4/ Includes coal used to produce coal, coal used by mine employees, and coal made into briquets or packaged fuel at the reporting mine.

5/ Includes shipments to beehive coke ovens.

6/ This item includes only such shipments to tidewater ports for cargoes destined to points outside the United States and Canada as are reported to this office. The tonnages shown here are not all inclusive.

7/ In the case of District 3, the tonnages shown in Column 1 for the all-rail, river and ex-river movement and truck movement represent lump coal and double screened coal with a bottom size larger than 2". The tonnages shown in Column 2 for these same movements represent lump coal and double screened coal with a bottom size 2" and smaller.

8/ Includes some crushed lignite.

9/ Includes all screenings. Breakdown of size of screenings not reported.

10/ Included with "All minus resultant and dedusted screenings with top size over 3/4" and not exceeding 2".

11/ District of origin not ascertainable.

TABLE 4

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDING MARCH 31, 1946 (Continued)

14336

Size Group and Movement / District and Use	All Minus Resultant and Deducted Screenings with Top Size not Exceeding 3/4" (5)					Total Columns 1 through 5 (6)					Size not Reported (7)					Other disposals, use and size not specified (8)	Coal used at mines 4/ (9)	Net Change in inventory (10)	Grand total Columns 6 through 10 (11)
	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail, River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total				
District 19. Wyoming																			
Total	8,976	-	-	805	9,781	9,486,393	28,110	-	85,344	9,599,847	-	-	-	-	-	-	145,349	32,437	9,777,633
Railroad Fuel	-	-	-	-	-	7,164,619	-	-	-	7,164,619	-	-	-	-	-				
Industrial	8,654	-	-	-	8,654	1,261,460	-	-	-	1,261,460	-	-	-	-	-				
Retail Dealers	322	-	-	-	322	965,467	-	-	-	965,467	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	97	-	-	97	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	28,013	-	-	28,013	-	-	-	-	-				
Use not Reported	-	-	-	805	805	94,847	-	-	85,344	180,191	-	-	-	-	-				
District 20. Utah																			
Total	69,974	73	-	-	70,047	6,248,756	31,972	-	173,240	6,453,968	-	-	-	715	715	123	32,689	33,468	6,520,963
Railroad Fuel	524	-	-	-	524	1,027,690	-	-	-	1,027,690	-	-	-	-	-				
Industrial	69,241	73	-	-	69,314	1,112,343	4,587	-	-	1,116,930	-	-	-	-	-				
Retail Dealers	209	-	-	-	209	2,642,462	-	-	-	2,642,462	-	-	-	-	-				
Byproduct and Water Gas 5/	-	-	-	-	-	1,351,587	-	-	-	1,351,587	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	1,324	-	-	1,324	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	26,061	-	-	26,061	-	-	-	-	-				
Use not Reported	-	-	-	-	-	114,674	-	-	173,240	287,914	-	-	-	715	715				
District 21. North and South Dakota																			
Total	10/	-	-	-	10/	2,092,771	-	-	110,092	2,202,863	-	-	-	-	-	-	112,993	3,050	2,318,906
Railroad Fuel	10/	-	-	-	10/	118,285	-	-	-	118,285	-	-	-	-	-				
Industrial	10/	-	-	-	10/	986,473	-	-	-	986,473	-	-	-	-	-				
Retail Dealers	10/	-	-	-	10/	988,013	-	-	-	988,013	-	-	-	-	-				
Use not Reported	-	-	-	-	-	-	-	-	110,092	110,092	-	-	-	-	-				
District 22. Montana																			
Total	97,984	-	-	270	98,254	4,135,021	-	-	42,502	4,177,523	49	-	-	-	49	-	16,377	1,233	4,195,182
Railroad Fuel	4,838	-	-	-	4,838	3,328,404	-	-	-	3,328,404	49	-	-	-	49				
Industrial	78,189	-	-	-	78,189	368,945	-	-	-	368,945	-	-	-	-	-				
Retail Dealers	6,535	-	-	-	6,535	418,089	-	-	-	418,089	-	-	-	-	-				
Use not Reported	8,422	-	-	270	8,692	19,583	-	-	42,502	62,085	-	-	-	-	-				
District 23. Washington and Alaska																			
Total	83,684	-	-	1,408	85,092	909,793	1,820	-	261,120	1,172,733	-	5,409	-	554	5,963	-	27,474	-59,646	1,146,524
Railroad Fuel	-	-	-	-	-	401,382	-	-	-	401,382	-	-	-	-	-				
Industrial	57,511	-	-	-	57,511	368,629	318	-	-	368,947	-	-	-	-	-				
Retail Dealers	2,435	-	-	-	2,435	87,506	-	-	-	87,506	-	-	-	-	-				
Byproduct and Water Gas	-	-	-	-	-	22,149	-	-	-	22,149	-	-	-	-	-				
Storage	-	-	-	-	-	6,241	-	-	-	6,241	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	1,502	-	-	1,502	-	5,409	-	-	5,409				
Use not Reported	23,738	-	-	1,408	25,146	23,886	-	-	261,120	285,006	-	-	-	554	554				
Total (excluding ex-dock movement)																			
Total	28,527,566	6,027,150	5,239,404	773,303	40,567,423	418,621,183	34,492,324	38,503,190	23,743,640	515,360,337	1,493,832	365,101	88,401	112,702	2,060,036	23,706	4,969,990	1,205,226	517,619,295
Railroad Fuel	796,832	6,396	2,671	-	805,899	117,756,396	388,164	3,009,842	-	121,154,402	167,862	61,509	31,110	-	260,481				
Industrial	20,837,494	4,777,486	1,904,644	-	27,519,624	145,748,685	16,460,206	11,394,006	-	173,602,897	1,132,522	10,415	25,582	-	1,168,519				
Retail Dealers	1,162,839	43,576	715	-	1,207,130	82,441,727	1,079,907	512,920	-	84,034,554	54,160	66,673	9,019	-	129,852				
Byproduct and Water Gas 5/	5,583,198	1,046,914	2,968,911	-	9,599,023	168,289,235	5,160,612	16,317,937	-	89,767,784	653	-	14,475	-	15,128				
Smithing	-	-	-	-	-	-	-	-	-	-	132,366	-	-	-	132,366				
Storage	10,750	-	355,270	-	366,020	232,659	-	5,954,994	-	6,187,653	643	-	4,077	-	4,720				
Bunker and Vessel Fuel	-	75,463	7,193	-	82,656	-	1,263,709	1,313,491	-	2,577,200	-	25,093	4,138	-	29,231				
Export 6/	-	77,263	-	-	77,263	-	9,887,554	-	-	9,887,554	-	199,125	-	-	199,125				
Use not Reported	136,453	52	-	773,303	909,808	4,152,481	252,172	-	23,743,640	28,148,293	5,626	2,286	-	112,702	120,614				
Tidewater - ex-dock movement 11/																			
Total	-	-	-	-	10/	-	-	-	-	8,519,151	-	-	-	-	113,032	-	-	-	8,632,183
Railroad Fuel	-	-	-	-	10/	-	-	-	-	42,595	-	-	-	-	-				
Industrial	-	-	-	-	10/	-	-	-	-	3,276,811	-	-	-	-	79,632				
Retail Dealers	-	-	-	-	10/	-	-	-	-	3,579,024	-	-	-	-	33,400				
Byproduct and Water Gas	-	-	-	-	10/	-	-	-	-	1,596,399	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	245	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	10/	-	-	-	-	24,077	-	-	-	-	-				
Lake - ex-dock movement 11/																			
Total	-	-	-	-	10/	-	-	-	-	15,989,376	-	-	-	-	89	-	-	-	15,989,465
Railroad Fuel	-	-	-	-	10/	-	-	-	-	2,167,762	-	-	-	-	-				
Industrial	-	-	-	-	10/	-	-	-	-	4,408,176	-	-	-	-	-				
Retail Dealers	-	-	-	-	10/	-	-	-	-	7,254,277	-	-	-	-	89				
Byproduct and Water Gas	-	-	-	-	10/	-	-	-	-	673,115	-	-	-	-	-				
Smithing	-	-	-	-	10/	-	-	-	-	3,966	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	10/	-	-	-	-	1,482,080	-	-	-	-	-				
GRAND TOTAL	-	-	-	-	40,567,423	-	-	-	-	539,868,864	-	-	-	-	2,173,157	23,706	4,969,990	1,205,226	548,240,943

RECAPITULATION OF THE DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56,
BY DISTRICT OF ORIGIN, METHOD OF MOVEMENT, AND/OR USE
(In Net Tons of 2,000 Pounds)

TABLE 5

(Includes mines with an average daily capacity of 50 tons or more and all mines, washeries, and preparation plants with rail or river connections)

Method of Movement and/or Use	DISTRICT OF ORIGIN											
	1	2	3	4	5	6	7	8	9	10	11	12
Total all-rail movements - Industrial Use	16,754,919	11,147,975	11,619,466	9,830,496	16,550	526,461	7,298,507	24,678,239	4,358,130	22,515,948	10,240,892	579,002
Total all-rail movements - Retail Dealers	2,374,867	2,295,815	2,922,045	2,514,999	23,863	139,876	14,530,561	22,742,460	3,882,134	13,695,660	3,273,320	126,360
Total shipments of railroad fuel, other than shipments to tidewater and lake	7,088,935	11,620,008	13,582,972	10,532,117	1,676	1,236,830	929,615	13,839,453	7,361,835	23,382,485	8,084,143	189,085
Total shipments of coal to byproduct and beehive coke plants, other than to tidewater and lake	4,003,338	31,030,231	5,230,809	12,187	-	-	7,143,509	10,585,006	-	253,141	84,218	100
Total shipments of smithing coal other than to tidewater and lake	83,503	488	376	-	-	-	19,239	3,081	-	-	-	-
Total river shipments, other than for railroad fuel, byproduct, or smithing use	967	2,626,222	357,767	282,366	-	738,448	-	2,824,892	375,854	4,108,749	-	-
Total ex-river shipments, other than for railroad fuel, byproduct, or smithing use	-	126,648	132,654	-	-	-	-	1,132,648	-	10,933	-	-
Total shipments to tidewater	13,904,493	1,503,522	4,533,217	-	-	36,943	13,890,582	6,842,541	886,447	552,976	-	-
Total shipments to the Great Lakes	2,532,129	7,485,845	4,453,274	4,261,268	-	463,375	9,832,118	22,062,656	524,126	127,110	-	-
Total shipments to distributors and wholesalers where the final destination and use are not known	592,320	1,246,765	161,617	103,761	-	12,730	273,928	1,080,718	135,422	134,255	76,048	867
Total all-rail, river and ex-river shipments to storage piles	7,800	11,460	58,152	-	-	-	9,637	140,012	-	-	-	-
Shipments by truck or wagon, other than deliveries to byproduct plants and to coke ovens and for smithing use	1,339,892	4,217,586	198,582	4,620,140	60,580	598,241	186,296	1,033,912	616,784	5,689,371	1,692,950	485,844
Shipments via private railroad, other than deliveries to byproduct plants and to coke ovens and for smithing use	-	139,949	42	33,447	-	-	-	2,152	-	-	-	-
Shipments via tramway, other than deliveries to byproduct plants and to coke ovens and for smithing use	29,648	164,427	-	14,553	-	21	-	339,791	47,261	-	-	-
Shipments via conveyor belt, other than deliveries to byproduct plants and to coke ovens and for smithing use	304,656	873,469	394,572	-	-	880,208	156,780	47,375	14,121	132,725	510,560	-
Total Tonnage Shipped	49,017,467	74,490,410	43,645,545	32,205,334	102,669	4,633,133	54,270,772	107,354,936	18,202,114	70,603,353	23,962,131	1,381,258
Coal used by mine employees	166,946	320,174	69,415	60,581	1,560	2,020	441,675	759,662	25,752	277,148	28,139	11,511
Coal used to produce coal	439,691	77,094	45,600	28,804	8,330	3,079	172,899	122,795	63,741	798,948	120,063	3,711
Coal made into briquettes or packaged fuel at the reporting mine	-	-	-	-	-	-	179,977	-	-	-	-	-
Other disposals not specified above	1,369	4,325	304	-	-	-	1,619	14,150	-	1,161	-	-
Total Tons Shipped or Used	49,625,473	74,892,003	43,760,864	32,294,719	112,559	4,638,232	55,066,942	108,251,543	18,291,607	71,680,610	24,110,333	1,396,480
Net Change in Inventories	68,725	37,372	60,202	44,223	- 444	14,051	199,764	307,120	56,985	164,974	83,303	2,952
Total Production Reported	49,694,198	74,929,375	43,821,066	32,338,942	112,115	4,652,283	55,266,706	108,558,663	18,348,592	71,845,584	24,193,636	1,399,432
Percent of Estimated Production	84.9	93.2	96.0	92.8	86.9	98.8	97.8	93.1	85.9	98.7	97.0	70.3

RECAPITULATION OF THE DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED MARCH 31, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56, BY DISTRICT OF ORIGIN, METHOD OF MOVEMENT, AND/OR USE

(In Net Tons of 2,000 Pounds)

TABLE 5

(Includes mines with an average daily capacity of 50 tons or more and all mines, washeries, and preparation plants with rail or river connections)

14336

Method of Movement and/or use	DISTRICT OF ORIGIN											
	13	14	15	16	17	18	19	20	21	22	23	Total
Total all-rail movements - Industrial Use	2,584,055	322,864	3,166,060	756,174	459,627	26,352	1,261,460	1,110,449	986,473	368,945	349,814	130,958,858
Total all-rail movements - Retail Dealers	1,271,197	1,248,314	2,587,424	601,188	1,572,712	68,686	965,467	2,642,462	988,013	418,089	87,506	80,973,018
Total shipments of railroad fuel, other than shipments to tidewater and lake	3,808,471	128,468	2,038,708	85,168	1,880,349	93,511	7,164,619	1,027,690	118,285	3,328,453	401,382	117,924,258
Total shipments of coal to byproduct and beehive coke plants, other than to tidewater and lake	7,375,182	48,777	78,184	-	1,071,470	-	-	1,351,587	-	-	22,149	68,289,888
Total shipments of smithing coal, other than to tidewater and lake	24,732	-	-	-	947	-	-	-	-	-	-	132,366
Total river shipments, other than for railroad fuel, byproduct, or smithing	206,679	-	-	-	-	-	-	-	-	-	-	11,521,944
Total ex-river shipments, other than for railroad fuel, byproduct or smithing use	-	-	-	-	-	-	-	-	-	-	-	1,402,883
Total shipments to tidewater	1,157,351	3,718	184,409	-	147,664	-	-	73,597	-	-	1,530	43,718,990
Total shipments to the Great Lakes	-	-	-	-	-	-	-	-	-	-	-	51,741,901
Total shipments to distributors and wholesalers where the final destination and use are not known	1,375	11,858	53,194	31	20,228	-	94,847	114,674	-	19,583	23,886	4,158,107
Total all-rail, river and ex-river shipments to storage piles	-	-	-	-	-	-	-	-	-	-	6,241	233,302
Shipments by truck or wagon, other than deliveries to byproduct plants and to coke ovens and for smithing use	398,700	11,871	823,909	750,645	430,497	26,975	85,344	173,955	110,092	42,502	261,674	23,856,342
Shipments via private railroad, other than deliveries to byproduct plants and to coke ovens and for smithing use	327,753	-	2,969	-	-	-	-	-	-	-	18,815	525,127
Shipments via tramway, other than deliveries to byproduct plants and to coke ovens and for smithing use	22,014	-	-	-	5,151	-	-	-	-	-	-	622,866
Shipments via conveyor belt, other than deliveries to byproduct plants and to coke ovens and for smithing use	-	-	-	23,401	8,499	24,138	-	1,894	-	-	-	3,372,398
Total Tonnage Shipped	17,177,509	1,775,870	8,934,857	2,216,607	5,597,144	239,662	9,571,737	6,496,308	2,202,863	4,177,572	1,172,997	539,432,248
Coal used by mine employees	99,345	3,564	10,441	16,618	26,866	2,489	37,397	15,522	4,630	10,507	12,024	2,403,986
Coal used to produce coal	91,318	5,014	17,298	38,398	84,265	10,177	107,952	17,167	84,957	5,870	15,450	2,362,621
Coal made into briquettes or packaged fuel at the reporting mine	-	-	-	-	-	-	-	-	23,406	-	-	203,383
Other disposals not specified above	-	-	655	-	-	-	-	123	-	-	-	23,706
Total Tons Shipped or Used	17,368,172	1,784,448	8,963,251	2,271,623	5,708,275	252,328	9,717,086	6,529,120	2,315,856	4,193,949	1,200,471	544,425,944
Net Change in Inventories	113,716	4,047	13,013	634	21,678	2,369	32,437	33,468	3,050	1,233	-59,646	1,205,226
Total Production Reported	17,481,888	1,788,495	8,976,264	2,272,257	5,729,953	254,697	9,749,523	6,562,588	2,318,906	4,195,182	1,140,825	545,631,170
Percent of Estimated Production	87.8	77.2	95.3	97.3	91.5	76.9	98.0	98.6	89.7	96.6	70.9	93.4

PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED MARCH 31, 1946
AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56
(In net tons of 2,000 pounds)

TABLE 6

(Includes mines with an average daily capacity of 50 tons or more and all mines, washeries, and preparation plants with rail or river connections)

District and Movement	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)		All Double Screened Coal with Top Size not exceeding 2" (2)		M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3).		All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)		All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)		Total Columns 1 through 5 (6)		Size not reported (7)	Coal used at mines 1/ (8)	Net change in inventory (9)	Grand total Columns 6 through 9 (10)
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent				
District 1. Eastern Pennsylvania																
Total	2,553,895	5.2	2,090,059	4.3	34,308,635	70.1	3,055,788	6.2	6,922,074	14.2	48,930,451	100.0	88,385	606,637	68,725	49,694,198
Truck	118,667	8.9	76,504	5.7	1,005,617	75.1	36,770	2.7	102,334	7.6	1,339,892	100.0	-			
Railroad fuel 2/	360,379	5.1	92,703	1.3	6,397,956	90.2	48,437	0.7	189,407	2.7	7,088,882	100.0	53			
Other	2,074,849	5.1	1,920,852	4.8	26,905,062	66.4	2,970,581	7.3	6,630,333	16.4	40,501,677	100.0	88,332			
District 2. Western Pennsylvania																
Total	8,299,955	11.2	2,974,260	4.0	54,830,602	73.6	6,401,780	8.6	1,946,273	2.6	74,452,870	100.0	41,865	397,268	37,372	74,929,375
Truck	1,678,004	39.9	367,204	8.8	1,244,419	29.6	714,352	17.0	199,055	4.7	4,203,034	100.0	14,552			
Railroad fuel 2/	1,321,970	11.4	206,522	1.8	9,481,321	81.7	515,638	4.4	83,268	0.7	11,608,719	100.0	11,289			
Other 3/	5,299,981	9.1	2,400,534	4.1	44,104,862	75.2	5,171,790	8.8	1,663,950	2.8	58,641,117	100.0	16,024			
District 3. Northern West Virginia 4/																
Total	2,638,145	6.1	7,695,085	17.6	25,448,945	58.3	3,240,450	7.4	4,618,040	10.6	43,640,665	100.0	5,184	115,015	60,202	43,821,066
Truck	27,082	13.6	74,614	37.6	88,537	44.6	191	0.1	8,158	4.1	198,582	100.0	-			
Railroad fuel 2/	536,622	3.9	2,452,399	18.1	10,380,296	76.4	116,124	0.9	97,531	0.7	13,582,972	100.0	-			
Other 3/	2,074,441	6.9	5,168,072	17.3	14,980,112	50.2	3,124,135	10.5	4,512,351	15.1	29,859,111	100.0	5,184			
District 4. Ohio																
Total	6,574,109	20.9	1,820,991	5.8	16,025,442	50.8	5,241,368	16.6	1,847,670	5.9	31,509,580	100.0	695,754	89,385	44,223	32,338,942
Truck	1,323,761	28.7	343,454	7.5	1,991,899	43.2	808,474	17.5	144,014	3.1	4,611,602	100.0	8,538			
Railroad fuel 2/	1,620,174	15.4	20,868	0.2	8,625,981	81.9	231,809	2.2	32,351	0.3	10,531,183	100.0	934			
Other	3,630,174	22.2	1,456,669	8.9	5,407,562	33.0	4,201,085	25.7	1,671,305	10.2	16,366,795	100.0	686,282			
District 5. Michigan																
Total	71,343	69.5	-	-	2,817	2.7	28,509	27.8	-	-	102,669	100.0	-	9,890	- 444	112,115
Truck	45,634	75.3	-	-	-	-	14,946	24.7	-	-	60,580	100.0	-			
Railroad fuel	1,630	97.3	-	-	-	-	46	2.7	-	-	1,676	100.0	-			
Other	24,079	59.6	-	-	2,817	7.0	13,517	33.4	-	-	40,413	100.0	-			
District 6. Panhandle																
Total	685,755	14.8	247,916	5.3	3,166,888	68.4	288,875	6.2	243,284	5.3	4,632,718	100.0	415	5,099	14,051	4,652,283
Truck	190,702	31.9	34,837	5.8	320,970	53.7	39,775	6.7	11,542	1.9	597,826	100.0	415			
Railroad fuel 2/	76,688	6.2	15,873	1.3	1,126,910	91.1	2,979	0.2	14,380	1.2	1,236,830	100.0	-			
Other	418,365	15.0	197,206	7.0	1,719,008	61.4	246,121	8.8	217,362	7.8	2,798,062	100.0	-			
District 7. Southern No. 1																
Total	10,652,903	19.7	4,805,094	8.9	17,884,953	33.1	4,778,264	8.9	15,905,651	29.4	54,026,865	100.0	245,526	794;551	199,764	55,266,706
Truck	125,124	67.2	38,682	20.7	18,241	9.8	131	0.1	4,118	2.2	186,296	100.0	-			
Railroad fuel 2/	39,030	4.5	21,466	2.5	669,118	77.2	55,934	6.4	81,531	9.4	867,079	100.0	62,536			
Other	10,488,749	19.8	4,744,946	8.9	17,197,594	32.5	4,722,199	8.9	15,820,002	29.9	52,973,490	100.0	182,990			
District 8. Southern No. 2																
Total	30,035,234	28.1	9,036,983	8.4	37,683,008	35.2	24,133,349	22.6	6,098,035	5.7	106,986,609	100.0	382,477	882,457	307,120	108,558,663
Truck	634,022	62.8	103,768	10.3	202,179	20.0	53,830	5.4	15,395	1.5	1,009,194	100.0	24,718			
Railroad fuel 2/	1,108,923	8.0	240,537	1.7	10,406,552	75.4	1,927,583	14.0	118,039	0.9	13,801,634	100.0	37,819			
Other 3/	28,292,289	30.7	8,692,678	9.4	27,074,277	29.4	22,151,936	24.0	5,964,601	6.5	92,175,781	100.0	319,940			

TABLE 6

PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED MARCH 31, 1946
AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56 (Continued)

District and Movement	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)		All Double Screened Coal with Top Size not exceeding 2" (2)		M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)		All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)		All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)		Total Columns 1 through 5 (6)		Size not reported (7)	Coal used at mines 1/ (8)	Net change in inventory (9)	Grand total Columns 6 through 9 (10)
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent				
District 9. West Kentucky																
Total	4,837,524	26.6	1,201,780	6.6	8,357,305	45.9	3,394,697	18.6	410,808	2.3	18,202,114	100.0	-	89,493	56,985	18,348,592
Truck	480,612	77.9	26,703	4.3	38,051	6.2	59,422	9.6	11,996	2.0	616,784	100.0	-			
Railroad fuel 2/	1,141,225	15.5	47,543	0.6	5,960,626	81.0	153,305	2.1	59,136	0.8	7,361,835	100.0	-			
Other	3,215,687	31.5	1,127,534	11.0	2,358,628	23.1	3,181,970	31.1	339,676	3.3	10,223,495	100.0	-			
District 10. Illinois																
Total	22,409,172	31.8	3,676,208	5.2	16,665,428	23.6	24,270,691	34.4	3,556,348	5.0	70,577,847	100.0	26,667	1,076,096	164,974	71,845,584
Truck	2,980,105	52.6	745,682	13.2	45,095	0.8	1,718,272	30.3	176,361	3.1	5,665,515	100.0	23,856			
Railroad fuel 2/	10,043,861	43.0	259,811	1.1	11,084,428	47.4	1,902,655	8.1	91,346	0.4	23,382,101	100.0	384			
Other 3/	9,385,206	22.6	2,670,715	6.5	5,535,905	13.3	20,649,764	49.7	3,288,641	7.9	41,530,231	100.0	2,427			
District 11. Indiana																
Total	10,134,533	42.5	2,255,106	9.5	1,569,296	6.6	8,627,969	36.2	1,237,950	5.2	23,824,854	100.0	137,277	148,202	83,303	24,193,636
Truck	864,853	51.9	199,148	11.9	160,165	9.6	406,623	24.4	37,124	2.2	1,667,913	100.0	25,037			
Railroad fuel	6,320,363	78.2	85,644	1.1	1,352,589	16.7	320,579	4.0	64	5/	8,079,239	100.0	4,904			
Other	2,949,317	21.0	1,970,314	14.0	56,542	0.4	7,900,767	56.1	1,200,762	8.5	14,077,702	100.0	107,336			
District 12. Iowa																
Total	507,923	37.0	47,066	3.4	44,048	3.2	770,038	56.2	2,323	0.2	1,371,398	100.0	9,860	15,222	2,952	1,399,432
Truck	240,310	50.0	27,617	5.8	32,819	6.8	177,469	36.9	2,323	0.5	480,538	100.0	5,306			
Railroad fuel	162,981	86.2	8,006	4.2	-	-	18,098	9.6	-	-	189,085	100.0	-			
Other	104,632	14.9	11,443	1.6	11,229	1.6	574,471	81.9	-	-	701,775	100.0	4,554			
District 13. Southeastern																
Total	1,678,899	9.8	348,259	2.0	7,077,721	41.3	7,966,528	46.5	72,319	0.4	17,143,726	100.0	33,783	190,663	113,716	17,481,888
Truck	192,694	48.3	14,631	3.7	157,317	39.5	16,736	4.2	17,322	4.3	398,700	100.0	-			
Railroad fuel	9,316	0.2	2,336	0.1	3,735,715	98.1	61,104	1.6	-	-	3,808,471	100.0	-			
Other 3/	1,476,889	11.4	331,292	2.6	3,184,689	24.6	7,888,688	61.0	54,997	0.4	12,936,555	100.0	33,783			
District 14. Arkansas and Oklahoma																
Total	959,977	56.2	68,267	4.0	371,416	21.7	148,403	8.7	160,956	9.4	1,709,019	100.0	66,851	8,578	4,047	1,788,495
Truck	8,724	73.7	501	4.2	2,611	22.1	-	-	-	-	11,836	100.0	35			
Railroad fuel	2,597	3.2	1,284	1.6	70,110	86.3	2,221	2.7	5,074	6.2	81,286	100.0	47,182			
Other	948,656	58.7	66,482	4.1	298,695	18.5	146,182	9.1	155,882	9.6	1.615,897	100.0	19,634			
District 15. Southwestern																
Total	3,750,403	42.0	667,537	7.5	1,718,649	19.3	2,774,994	31.1	13,025	0.1	8,924,608	100.0	10,904	27,739	13,013	8,976,264
Truck	485,455	59.0	59,259	7.2	131,628	16.0	133,765	16.3	12,505	1.5	822,612	100.0	1,297			
Railroad fuel	1,042,284	51.2	37,730	1.8	895,435	44.0	60,642	3.0	-	-	2,036,091	100.0	2,617			
Other	2,222,664	36.6	570,548	9.4	691,586	11.4	2,580,587	42.6	520	5/	6,065,905	100.0	6,990			
District 16. Northern Colorado																
Total	815,589	36.8	219,567	9.9	26,908	1.2	998,739	45.1	155,804	7.0	2,216,607	100.0	-	55,016	634	2,272,257
Truck	368,872	49.1	141,791	18.9	10,407	1.4	210,206	28.0	19,369	2.6	750,645	100.0	-			
Railroad fuel	56,395	66.2	-	-	28	5/	28,745	33.8	-	-	85,168	100.0	-			
Other	390,322	28.3	77,776	5.6	16,473	1.2	759,788	55.0	136,435	9.9	1,380,794	100.0	-			
District 17. Southern Colorado																
Total	1,849,036	33.2	131,569	2.4	1,799,396	32.3	1,657,074	29.7	135,924	2.4	5,572,999	100.0	24,145	111,131	21,678	5,729,953
Truck	263,698	62.4	27,790	6.6	5,786	1.3	116,340	27.5	9,204	2.2	422,818	100.0	7,679			
Railroad fuel	56,795	3.0	14,176	0.8	1,533,457	81.6	263,770	14.0	12,056	0.6	1,880,254	100.0	95			
Other	1,528,543	46.7	89,603	2.7	260,153	8.0	1,276,964	39.1	114,664	3.5	3,269,927	100.0	16,371			

TABLE 6

PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED MARCH 31, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56 (Continued)

District and Movement	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)		All Double Screened Coal with Top Size not exceeding 2" (2)		M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)		All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)		All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)		Total Columns 1 through 5 (6)		Size not reported (7)	Coal used at mines 1/ (8)	Net change in inventory (9)	Grand total Columns 6 through 9 (10)
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent				
District 18. New Mexico																
Total	136,662	57.0	21,704	9.1	4,655	1.9	68,714	28.7	7,927	3.3	239,662	100.0	-	12,666	2,369	254,697
Truck	20,316	75.3	4,500	16.7	2,125	7.9	34	0.1	-	-	26,975	100.0	-			
Railroad fuel	49,237	52.7	-	-	-	-	36,987	39.5	7,287	7.8	93,511	100.0	-			
Other	67,109	56.3	17,204	14.4	2,530	2.1	31,693	26.6	640	0.6	119,176	100.0	-			
District 19. Wyoming																
Total	1,339,192	14.0	172,649	1.8	6,486,059	67.8	1,564,056	16.3	9,781	0.1	9,571,737	100.0	-	145,349	32,437	9,749,523
Truck	66,643	78.1	9,206	10.8	1,057	1.2	7,633	8.9	805	1.0	85,344	100.0	-			
Railroad fuel	375,254	5.2	40,337	0.6	6,389,904	89.2	359,124	5.0	-	-	7,164,619	100.0	-			
Other 3/	897,295	38.6	123,106	5.3	95,098	4.1	1,197,299	51.6	8,976	0.4	2,321,774	100.0	-			
District 20. Utah																
Total	2,192,514	33.8	215,121	3.3	2,119,351	32.6	1,898,633	29.2	69,974	1.1	6,495,593	100.0	838	32,689	33,468	6,562,588
Truck	129,603	74.8	398	0.3	60	5/	43,179	24.9	-	-	173,240	100.0	715			
Railroad fuel	69,954	6.8	20,588	2.0	660,697	64.3	275,927	26.8	524	0.1	1,027,690	100.0	-			
Other	1,992,957	37.7	194,135	3.7	1,458,594	27.5	1,579,527	29.8	69,450	1.3	5,294,663	100.0	123			
District 21. North and South Dakota																
Total	944,920	42.9	229,972	10.4	589,556	26.8	438,415	19.9	-	-	2,202,863	100.0	-	112,993	3,050	2,318,906
Truck	70,598	64.1	8,399	7.6	31,095	28.3	-	-	-	-	110,092	100.0	-			
Railroad fuel	19,484	16.5	1,660	1.4	63,034	53.3	34,107	28.8	-	-	118,285	100.0	-			
Other	854,838	43.3	219,913	11.1	495,427	25.1	404,308	20.5	-	-	1,974,486	100.0	-			
District 22. Montana																
Total	458,772	11.0	139,465	3.3	3,211,500	76.9	269,532	6.5	98,254	2.3	4,177,523	100.0	49	16,377	1,233	4,195,182
Truck	34,183	80.4	5,406	12.7	-	-	2,643	6.2	270	0.7	42,502	100.0	-			
Railroad fuel	19,897	0.6	191	5/	3,190,032	95.9	113,446	3.4	4,838	0.1	3,328,404	100.0	49			
Other	404,692	50.2	133,868	16.6	21,468	2.7	153,443	19.0	93,146	11.5	806,617	100.0	-			
District 23. Washington and Alaska																
Total	221,594	18.9	274,359	23.4	412,782	35.2	178,616	15.2	85,092	7.3	1,172,443	100.0	554	27,474	-59,646	1,140,825
Truck	118,275	45.3	136,248	52.2	655	0.3	4,534	1.7	1,408	0.5	261,120	100.0	554			
Railroad fuel	1,822	0.5	189	5/	373,801	93.1	25,570	6.4	-	-	401,382	100.0	-			
Other 3/	101,497	19.9	137,922	27.1	38,326	7.5	148,512	29.1	83,684	16.4	509,941	100.0	-			
Grand Total																
Total	113,748,049	21.2	38,339,017	7.1	239,805,360	44.6	102,195,482	19.0	43,597,512	8.1	537,685,420	100.0	1,770,534	4,969,990	1,205,226	545,631,170
Truck	10,467,937	44.1	2,446,342	10.3	5,490,733	23.1	4,565,325	19.2	773,303	3.3	23,743,640	100.0	112,702			
Railroad fuel 2/	24,436,881	20.8	3,569,863	3.0	82,397,990	70.0	6,554,830	5.5	796,832	0.7	117,756,396	100.0	167,862			
Other 3/	78,843,231	19.9	32,322,812	8.2	151,916,637	38.3	91,075,327	23.0	42,027,377	10.6	396,185,384	100.0	1,489,970			

1/ Includes coal used to produce coal, coal used by mine employees, and coal made into briquets or packaged fuel at the reporting mine.
2/ Includes all methods of movement except tidewater and lake.
3/ Includes truck shipments to byproduct and beehive coke ovens away from the producing mine and for smithing use as follows: District 2, 988,467 tons; District 3, 19,176 tons; District 8, 8,625 tons; District 10, 57,881 tons; District 13, 7 tons; District 19, 7 tons; District 23, 2,959 tons.
4/ In the case of District 3, the tonnages shown in Column 1 represent lump coal and double screened coal with a bottom size larger than 2". The tonnages shown in Column 2 represent lump coal and double screened coal with a bottom size 2" and smaller.
5/ Less than one tenth of one percent.
6/ Includes some crushed lignite.
7/ Includes all screenings. Breakdown of size of screenings not reported.
8/ Included with "All minus resultant and dedusted screenings with top size over 3/4" and not exceeding 2"."

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MINERAL INDUSTRY SURVEYS

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

For release March 10, 1947.

MINERAL MARKET REPORTS
M. M. S. NO. 1499 and
IRON ORE REPORT NO. 47.

IRON ORE IN 1946 — PRELIMINARY

Strikes at iron mines, the Lake Superior shipping strike, and the effect of the steel and coal strikes on iron ore markets were responsible, chiefly, for a 19 percent drop in iron ore output in 1946, according to the Bureau of Mines, United States Department of the Interior. United States production of iron ore in 1946 was estimated at 71,214,000 gross tons compared with 88,376,393 tons in 1945. Decreased output was apparent in all districts except in the Southeastern States (Alabama, Georgia and Virginia) where the output was about 1 percent above that of the previous year. The Lake Superior district (Michigan, Minnesota and Wisconsin) which supplies four-fifths of the domestic requirements, produced 21 percent less iron ore than in 1945, the Northeastern States 28 percent less and the Western States 21 percent less. By-product ore, obtained from treating pyrites, was produced at about the same rate as in 1945 and totaled approximately one-half million tons.

Shipments of iron ore in 1946 were estimated at 70,435,000 gross tons, 20 percent less than in 1945. The estimated value of iron ore shipments in 1946 was $215,900,000 compared with $243,760,986 in 1945. The average values per gross ton, were $3.07 in 1946 compared with $2.77 in 1945 and $2.70 in 1944.

Stocks of iron ore at mines and mills on December 31,1946 were estimated at 5,688,000 gross tons compared with 4,803,234 tons at the end of 1945. Of the quantity in stockpiles, 36 percent was at mines in Michigan, 27 percent in Minnesota and 4 percent in Wisconsin — a total of 67 percent in the Lake Superior district. The Northeastern States (New Jersey, New York and Pennsylvania) accounted for 23 percent of the U. S. total; 4 percent was in California and the remaining 6 percent consisted of by-product ore. Mine stocks of iron ore in all other States totaled less than 1 percent.

Production and shipments of ore containing (natural) 5 to 35 percent manganese, not included in the iron ore statistics, amounted to 1,005,000 gross tons and 1,009,000 tons respectively in 1946. Of these quantities, the Lake Superior district supplied 95 percent.

Iron ore was mined in at least 15 States during 1946 and two others (Delaware and Tennessee) produced and shipped by-product ore obtained from pyrites. In this report the States, excepting those producing only by-product ore, have been subdivided into 4 main groups, namely the Lake Superior district, Southeastern States, Northeastern States and Western States.

Prepared by Norwood B. Melcher and John Hozik under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

This release, a part of the regular monthly series, includes a preliminary review of 1946 based on monthly returns from all producing companies with some year-end adjustments. A review of December comparable with previous months is given below and is followed by an annual review of the major producing districts.

Production of iron ore in December followed the seasonal downward trend but was at a rate 16 percent greater than that of December 1945. Output in December totaled 2,273,994 gross tons compared with 6,605,062 tons during the previous month and 1,952,307 tons in December 1945. Shipments from mines and mills totaled 1,193,073 tons in December and 6,830,027 tons in November.

Iron ore production of the Lake Superior district totaled 1,136,847 tons in December 1946 compared with 1,039,539 tons in the corresponding month of 1945. In both periods, most of the tonnage was from underground mines which continued to operate while the vast open-pit operations of Minnesota were closed for the winter. The final boat loading of 1946 was made at Superior, Wisconsin on December 6. In 1945 the final loading was at Escanaba Harbor on December 5 and in 1944 Ashland Harbor on November 28. December shipments from the Lake Superior district totaled 90,898 tons compared with 57,533 tons in December 1945.

Production and shipments of iron ore in the Southeastern States (Alabama, Georgia and Virginia) declined for the second consecutive month and totaled 517,685 tons and 518,089 tons, respectively, in December. These tonnages represent decreases from November of 11 percent in production and 13 percent in shipments.

In December the Northeastern States (New Jersey, New York and Pennsylvania) produced 11 percent more iron ore than in November and shipments were 19 percent more; the gains were entirely attributed to New York mines. The district in December produced 294,657 tons of iron ore and shipped 286,331 tons.

Output of iron ore from the Western States of California, Missouri, Nevada, Texas, Utah and Wyoming changed very little from November. Production and shipments in December amounted to 276,630 tons and 239,456 tons, respectively, compared with 274,218 tons and 243,324 tons, respectively, in the previous month.

According to the Bureau of the Census, imports of iron ore in December decreased for the third consecutive month and totaled 235,890 tons valued at $831,154. As a result of the closing of the Lake shipping season, Canada which supplied the United States with 136,306 tons in November, contributed only 14,821 tons in December. Imports from Chile increased from 69,700 tons in November to 156,897 tons in December. No iron ore was received from Cuba during the month whereas 55,300 tons were imported in November. Of the December imports, Chile supplied 67 percent, Sweden 20 percent, Canada 6 percent and Newfoundland-Labrador, Norway, Algeria and Mexico, together, 7 percent. As shipments to Canada were affected by the Lake closing, exports in December amounted to 11,899 tons compared with 221,942 tons in November.

Mine production, shipments, and stocks of iron ore in the United States in December 1946, in gross tons

(Exclusive of ore containing 5 percent or more manganese)

	December production			December shipments			Total stocks Dec.31, 1946
	Steel furnace ore	Other ore	Total	Steel furnace ore	Other ore	Total	
Lake Superior:							
Michigan------	72,705	781,010	853,715	30,098	6,310	36,408	2,021,269
Minnesota-----	82,786	117,669	200,455	167	54,323	54,490	1,539,307
Wisconsin-----	-------	82,677	82,677	-------	-------	-------	222,819
Total-------	155,491	981,356	1,136,847	30,265	60,633	90,898	3,783,395
Southeastern:							
Alabama-------	554	497,451	498,005	554	497,958	498,512	15,427
Georgia-------	-------	19,680	19,680	-------	19,577	19,577	348
Virginia------							
Total-------	554	517,131	517,685	554	517,535	518,089	15,775
Northeastern:							
New Jersey----	12,436	23,475	35,911	12,252	23,355	35,607	2,247
New York------	9,414	249,332	258,746	11,560	239,164	250,724	1,288,109
Pennsylvania--							
Total-------	21,850	272,807	294,657	23,812	262,519	286,331	1,290,356
Western:							
California----	-------	46,656	46,656	-------	15,512	15,512	218,414
Missouri------	714	14,921	15,635	634	15,764	16,398	150
Nevada--------							
Texas---------							
Utah----------	2,218	153,381	155,599	1,518	147,288	148,806	22,313
Wyoming-------	-------	58,740	58,740	-------	58,740	58,740	-------
Total-------	2,932	273,698	276,630	2,152	237,304	239,456	240,877
Byproduct 1/----	24,417	23,758	48,175	24,520	33,779	58,299	357,929
Grand total---	205,244	2,068,750	2,273,994	81,303	1,111,770	1,193,073	5,688,332

1/ Includes pyrites cinder and sinter treated in but not necessarily mined in Colorado, Delaware, Illinois, Michigan, Pennsylvania, Tennessee and Virginia.

Production of iron ore in the United States, 1942-46, by districts, in gross tons.

(Exclusive of ore containing 5 percent or more manganese)

	U. S. Total	Lake Superior	South-eastern	North-eastern	Western	Undis-tributed1/
1942----------	105,526,195	91,005,021	9,159,228	3,119,506	1,599,429	643,011
1943----------	101,247,835	85,789,017	8,478,736	3,467,575	2,859,994	652,513
1944----------	94,117,705	79,111,320	7,121,676	3,849,396	3,442,405	592,908
1945----------	88,376,393	74,821,045	6,329,987	3,620,147	3,087,774	517,440
1946:						
January---------	1,973,692	1,207,521	382,016	224,192	118,459	41,504
February--------	768,387	256,372	281,006	152,786	39,740	38,483
March----------	1,095,861	101,705	620,670	219,380	107,986	46,120
April----------	2,191,667	1,230,534	611,142	160,799	147,374	41,818
May------------	4,578,309	3,746,232	499,864	141,202	147,297	43,714
June-----------	8,849,939	8,019,587	452,115	160,079	175,393	42,765
July-----------	11,612,176	10,522,898	610,039	175,376	260,134	43,729
August---------	11,089,592	9,827,534	678,073	237,363	301,670	44,952
September------	10,742,049	9,571,996	565,359	257,007	305,661	42,026
October--------	9,917,033	8,637,001	626,507	322,785	286,548	44,192
November-------	6,605,062	5,441,158	578,920	266,532	274,218	44,234
December-------	2,273,994	1,136,847	517,685	294,657	276,630	48,175
Total 1946 2/	71,214,000	59,243,000	6,396,000	2,612,000	2,441,000	522,000
% of Total---	100.0	83.2	9.0	3.7	3.4	0.7

Shipments of iron ore in the United States, 1942-46, by districts, in gross tons.

(Exclusive of ore containing 5 percent or more manganese)

	U. S. Total	Lake Superior	South-eastern	North-eastern	Western	Undis-tributed1/
1942----------	105,988,514	91,542,933	9,153,690	3,076,523	1,540,507	674,861
1943----------	99,462,850	84,537,254	8,481,422	3,219,026	2,579,768	645,380
1944----------	95,135,675	80,678,516	7,100,350	3,504,275	3,261,494	591,040
1945----------	88,136,715	74,698,678	6,319,984	3,363,659	3,198,621	555,773
1946:						
January---------	779,003	45,132	387,137	165,663	143,711	37,360
February--------	472,641	22,337	279,058	100,610	39,164	31,472
March----------	1,089,555	38,003	632,225	201,548	154,485	63,294
April----------	2,140,803	1,191,961	608,213	125,740	156,603	58,286
May------------	4,689,665	3,893,425	497,930	106,175	145,410	46,725
June-----------	9,914,431	9,113,952	462,085	125,764	162,014	50,616
July-----------	12,215,485	11,160,766	615,474	142,233	242,656	54,356
August---------	11,083,236	9,879,553	669,361	214,868	261,029	58,425
September------	10,546,089	9,366,995	584,160	236,919	305,178	52,837
October--------	9,964,845	8,756,498	614,364	299,317	239,735	54,931
November-------	6,830,027	5,694,783	595,703	241,579	243,324	54,638
December-------	1,193,073	90,898	518,089	286,331	239,456	58,299
Total 1946 2/	70,435,000	58,798,000	6,436,000	2,247,000	2,333,000	621,000
% of Total---	100.0	83.5	9.1	3.2	3.3	0.9

1/ By product ore.
2/ Preliminary. Sum of monthly figures does not necessarily agree with the annual total because of certain adjustments made at the close of the year.

Imports of iron ore in 1946 were the largest in 16 years and totaled 2,746,600 gross tons valued at $10,352,658, or an average of $3.77 per ton. The value of iron ore as used in this report represents the market value at the port of shipment on day of shipment, exclusive of boat loading costs. In 1945, United States imports were 1,193,514 tons valued at $4,100,344. Of the 1946 imports, Canada and Chile each supplied 40 percent, Sweden 8 percent, Cuba 6 percent, Algeria 3 percent and numerous smaller countries 3 percent.

Iron ore exports in 1946, mostly to Canada, totaled 1,505,854 tons valued at $5,492,549.

Iron ore imported for consumption in the United States in 1946, by countries 1/

(Exclusive of ore containing 10 percent or more manganese)

Source of ore	December 1946			January-December 1946		
	Gross tons	Value 2/		Gross tons	Value 2/	
		Per ton	Total		Per ton	Total
Algeria	1,050	$5.61	$5,890	83,381	$3.50	$291,873
Argentina	———	———	———	18	7.56	136
Belgium	———	———	———	1,200	3.00	3,600
Brazil	———	———	———	3	8.00	24
Canada	14,821	4.02	59,639	1,095,236	4.63	5,067,871
Chile	156,897	2.68	420,014	1,095,627	2.25	2,459,704
Cuba	———	———	———	3/ 158,268	3/4.74	3/749,654
France	———	———	———	3,969	2.77	10,999
French Morocco	———	———	———	5,550	3.17	17,600
Greece	———	———	———	2,000	3.00	6,000
Italy	———	———	———	500	2.00	1,000
Mexico	302	1.77	535	3/ 789	3/1.36	3/ 1,070
Newfoundland and Labrador	7,800	4.00	31,200	15,500	4.00	62,000
Norway	7,430	5.44	40,398	24,458	6.13	150,001
Spain	———	———	———	4	5.00	20
Sweden	47,590	5.75	273,478	232,887	5.95	1,384,993
Tunisia	———	———	———	26,873	4.51	121,233
Union of So. Africa	———	———	———	2	50.00	100
United Kingdom	———	———	———	335	73.97	24,780
Total	235,890	3.52	831,154	2,746,600	3.77	10,352,658

1/ According to the Bureau of the Census.
2/ Market value at port of shipment on day of shipment, exclusive of boat loading costs.
3/ Revised. Iron Ore Report No. 46 erroneously showed imports of 11,500 gross tons valued at $77,280 from Mexico in October. This quantity and value has been credited correctly to Cuba in this report.

Lake Superior District. - Iron mining activities in the Lake Superior district were interrupted seriously by the iron mines strike which began on February 8. By the middle of March, the Oliver Iron Mining Co. and the Inter-State Iron Co. had resumed work but it was not until May 25 that 11 companies representing 93 percent of the annual shipping capacity had reached an agreement with the union; operations at other mines followed. The Lake shipping strike which was only partially effective, began on August 15 and was officially over on August 30. The direct effect of these two strikes and the indirect effect of the steel and coal strikes on the Lake Superior district is reflected in the following statistics. During the first 8 months of 1946 the Lake Superior district shipped 35 million tons of iron ore from the mines whereas during the corresponding period of 1945 the total was 52 million tons.

Production and shipments of iron ore, exclusive of ore containing (natural) 5 to 35 percent manganese, from the Lake Superior district in 1946 were estimated at 59,243,000 gross tons and 58,798,000 tons, respectively. Each figure represents a decrease of 21 percent from 1945. In addition to the iron ore, 950,000 gross tons of ore containing 5 percent or more manganese were produced during 1946; mine shipments of this material totaled 955,000 tons. It should be noted here that although these quantities of manganiferous ore were produced and shipped from the mines, it is known that a substantial portion was blended with other ores and the mixture shipped ultimately as iron ore. The Lake Superior Iron Ore Association statistics on manganiferous ore give only the tonnages shipped for consumption without blending. Consequently, it is impossible to reconcile data of the Association with those of the Bureau of Mines with respect to manganiferous iron ore. Combined data of the two reports are comparable.

Total value of iron ore shipped from mines in this district was estimated at $172,800,000, a decrease of 12 percent from the 1945 total of $195,830,523. The average value per gross ton in 1946 was estimated at $2.94 compared with $2.62 in 1945 and $2.52 in 1944.

Stocks of iron ore at mines in the Lake Superior district on December 31, 1946 totaled 3,783,000 tons compared with 3,320,729 tons at the end of 1945.

Southeastern States. - Production of iron ore in the Southeastern States (Alabama, Georgia and Virginia) in 1946 totaled 6,396,000 gross tons, an increase of 1 percent over 1945 and shipments were 6,436,000 tons, an increase of 2 percent. Alabama accounted for 95 percent of the production and shipments of iron ore from the Southeastern States during 1946 and was the third largest producing State in the country. Stocks of iron ore at mines, virtually all in Alabama, were estimated at 16,000 tons. The value of iron ore shipped in 1946 from Southeastern mines was estimated at $19,300,000 or $3.00 per gross ton.

Alabama produces both hematite and brown iron ores. The hematite operations account for most of the district's tonnage and are centered in underground mines in Jefferson County, Alabama; brown ore is mined from numerous open-pits located in various counties. Iron ore from Georgia and Virginia is of the brown variety and is mined by open-pit methods. Virtually all of the ore from the district is for use in blast furnaces in the Birmingham area; the small quantity of brown ore from Virginia is used as a pigment.

Northeastern States. – The Northeastern States (New Jersey, New York and Pennsylvania) in 1946 produced 2,612,000 gross tons of iron ore, 28 percent less than in 1945, and shipped 2,247,000 tons, 33 percent less than the 1945 total. Output in 1945 was 3,620,147 tons and shipments were 3,363,659 tons. New York and Pennsylvania mines in 1946 produced a total of 2,195,000 tons of iron ore and shipped 1,828,000 tons compared with 3,189,839 tons and 2,934,912 tons, respectively, in 1945. Operations of New York and Pennsylvania are combined by the Bureau of Mines in order to conceal Pennsylvania operations which except for a small tonnage are conducted by one company which has not given permission to disclose its figures. Although the output of Pennsylvania was less than in 1945, a much greater drop occurred in New York where Jones & Laughlin's Benson mine and Republic's Chateaugay mine and Port Henry division were closed during much of the year by strikes. New Jersey mines which accounted for 16 percent of the district's output and 19 percent of the shipments in 1946 produced and shipped slightly less iron ore than in the previous year. Production from the three mines in New Jersey in 1946 totaled 417,000 tons and shipments 419,000 tons. The total value of 1946 shipments of iron ore from the Northeastern States was estimated at $16,300,000, or an average value of $7.25 per ton. Stocks of iron ore at mines (virtually all in New York) at the end of 1946 were estimated at 1,290,000 tons –– a 40 percent increase over the 920,000 tons on hand December 31, 1945.

Western States. – Production and shipments of iron ore from the States of California, Utah, Wyoming, Missouri, Nevada and Texas totaled 2,441,000 gross tons and 2,333,000 tons respectively in 1946. The district's output was 21 percent under that of 1945 and total shipments were 27 percent less. Although production and shipments of Utah each declined 32 percent from 1945, Utah continued to be the most important iron ore State in the west, accounting for 54 percent (1,322,000 tons) of the western production and 57 percent (1,319,000 tons) of the shipments in 1946. Wyoming produced and shipped 624,000 tons during the year –– 3 percent more than in 1945. The output of California totaled 335,000 tons, an increase of 61 percent over the previous year, but inasmuch as a considerable portion was stockpiled, shipments were 30 percent less than in 1945 and totaled 229,000 tons. Missouri, Nevada and Texas, together, produced a total of 160,000 tons of iron ore and shipped 161,000 tons in 1946 –– M. A. Hanna Co.'s Iron Mountain mine in Missouri accounted for virtually all of this tonnage. The total value of the iron ore shipped from the Western States, f.o.b. mines, is estimated at $4,100,000, or an average of $1.76 per ton. Mine stocks, mostly in California, totaled 241,000 tons on Dec. 31.

By-product ore. – Production of by-product ore (iron cinder and sinter obtained from the pyrites industry) was estimated at 522,000 gross tons in 1946 compared with 517,440 tons in 1945. Shipments in 1946 increased 12 percent over the previous year and totaled 621,000 tons valued at $3,400,000. In 1945, shipments of by-product ore amounted to 555,773 tons valued at $2,758,954. By-product ore is produced chiefly in the Southeastern States.

Estimates of iron ore produced and shipped in the United States in 1946 and actual output in 1945

	Ore produced		Ore shipped			
	1945	1946	1945		1946	
	Gross tons	Gross tons	Gross tons	Value	Gross tons	Value
Lake Superior:						
Michigan----------	11,832,493	8,685,000	11,833,055	35,313,135	8,477,000	$172,800,000
Minnesota---------	61,620,337	49,499,000	61,569,976	156,942,255	49,223,000	
Wisconsin---------	1,368,215	1,059,000	1,295,647	3,575,133	1,098,000	
	74,821,045	59,243,000	74,698,678	195,830,523	58,798,000	172,800,000
Southeastern States:						
Alabama-----------	6,048,562	6,093,000	6,038,631	14,547,223	6,134,000	19,300,000
Georgia-----------	281,425	303,000	281,353	(1)	302,000	
Virginia----------						
	6,329,987	6,396,000	6,319,984	(1)	6,436,000	19,300,000
Northeastern States:						
New Jersey--------	430,308	417,000	428,747	2,956,510	419,000	16,300,000
New York----------	3,189,839	2,195,000	2,934,912	(1)	1,828,000	
Pennsylvania------						
	3,620,147	2,612,000	3,363,659	(1)	2,247,000	16,300,000
Western States:						
California--------	208,609	335,000	326,295	1,050,338	229,000	4,100,000
Utah--------------	1,931,749	1,322,000	1,925,572	2,170,334	1,319,000	
Wyoming-----------	606,005	624,000	606,005	2,372,690	624,000	
Other-------------	341,411	160,000	340,749		161,000	
	3,087,774	2,441,000	3,198,621	5,593,362	2,333,000	4,100,000
By-product ore 2/---	517,440	522,000	555,773	2,758,954	621,000	3,400,000
Grand Total-------	88,376,393	71,214,000	88,136,715	243,760,986	70,435,000	215,900,000

1/ Included in Grand Total.

2/ Obtained from pyrites treated in, but not necessarily mined in Delaware, Michigan, Pennsylvania, Tennessee and Virginia.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

MINERAL MARKET REPORT
M.M.S. NO. 1501

For release March 20, 1947.

RECOVERY OF TIN AT DETINNERS' PLANTS DECLINES 21% IN 1946

Recovery of tin at detinning plants, as metal and in chemical compounds, declined 21 percent in 1946 from that in the preceding year, according to the Bureau of Mines, United States Department of the Interior. There was a precipitate drop in the quantity of old tin cans available for detinning, which resulted in the recovery of only 3,144 short tons of tin by these plants during the year, compared with 3,981 tons in 1945 and 4,101 tons in 1944.

Almost all of the loss was in tin recovered from old cans, as that recovered from new tin-plate clippings declined only 1 percent, from 2,911 tons in 1945 to 2,884 tons in 1946. Tin recovered from old tin-coated containers fell 76 percent, from 1,070 tons in 1945 to only 260 tons in 1946. A total of 249,813 long tons of clean tin-plate clippings was made available to detinners for treatment last year, compared with 257,545 tons in 1945, but the quantity of old tin cans treated was only 28,434 tons in 1946, compared with 114,311 tons in the preceding year.

After the end of the war, tin can collection systems in the larger cities were discarded because of the fact that the cans were no longer prepared for collection by housewives. Conservation Order No. 325, which directed the delivery of tinplate scrap and old tin cans to detinning plants, continued in effect until November 26, 1946. The Civilian Production Administration authority revoked the order on that date, explaining its action with a statement that the quantity of such scrap had been negligible during recent months.

The average quantity of tin recovered per long ton of clean tin-plate scrap used increased from 22.61 pounds in 1945 to 23.09 pounds in 1946, indicating a slightly heavier coating of tin on new clippings during the year. However, the average quantity of tin recovered per long ton of old tin-coated containers used continued its steady decline, dropping to 18.33 pounds in 1946, compared with 18.73 pounds in 1945. Of the 3,144 short tons of tin recovered, 2,772 tons were reclaimed as metal in the forms of pigs and annodes, and 372 tons in the form of tin compounds. These figures are comparable to the 1945 recovery of 3,527 tons as metal and 454 tons in compounds. In addition, detinners also treated tin-bearing chemical residues and tin-base scrap to recover a total of 30 tons of tin as metal and 8 tons of tin in compounds in 1946.

Prepared by Herbert L. Cullen, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Secondary tin recovered at detinning plants in the United States, 1945-46

		1945	1946
Scrap treated:			
Clean tin plate...........................	long tons	257,545	249,813
Old tin-coated containers................	long tons	114,311	28,434
		371,856	278,247
Tin recovered from new tin-plate clippings	short tons	2,911	2,884
Tin recovered from old tin-coated containers	short tons	1,070	260
		3,981	3,144
Tin recovered as metal....................	short tons	1/3,527	1/ 2,772
Tin recovered in compounds................	short tons	454	372
		2/3,981	2/ 3,144
Weight of tin compounds produced...........	short tons	933	757
Average quantity of tin recovered per long ton of clean tin-plate scrap used......................	pounds....	22.61	23.09
Average quantity of tin recovered per long ton of old tin-coated containers used.................	pounds....	18.73	18.33

1/ Includes a small tonnage of pig tin of less than standard purity and, consequently, subject to further refining or alloying.

2/ Recovery from tin-plate clippings and old containers only. In addition, detinners recovered 11 tons of tin as metal from tin-bearing chemical residues in 1945, and 30 tons of tin as metal and 8 tons of tin in compounds from tin-base scrap and residues in 1946.

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UNITED STATES DEPARTMENT OF THE INTERIOR

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MINERAL MARKET REPORT
MMS No. 1502

BARITE IN THE FOURTH QUARTER OF 1946 - PRELIMINARY FIGURES FOR YEAR 1946

Barite production in 1946 set a new record of 723,919 short tons, 5 percent greater than output in the previous record year, 1945, according to the Bureau of Mines, United States Department of the Interior. Fourth quarter output was 188,564 tons in 1946, compared with 170,345 tons for the comparable 1945 quarter. A slight decline was registered from third quarter production, owing to cold weather, which always curtails operations at barite washers and flotation mills.

As in each year since and including 1944, Arkansas again led production in 1946 with 288,286 short tons, followed closely by Missouri with 273,618 tons. Georgia, Tennessee, California, Nevada, and Arizona followed in that order. Owing to the exodus of several Georgia barite producers to Missouri in 1945-46, Georgia output dropped from 109,482 short tons in 1945 to 70,190 tons in 1946. The gap was made up by shipments from Missouri and Canada. Imports from Canada reached 44,109 short tons in 1946. (See import table at bottom of this page.) A new producer opened in the latter part of 1946, Arizona Barite Co., Mesa, Ariz., with underground mine 22 miles northeast of Mesa, and mill a little south of Mesa, on the Southern Pacific Railroad. Mill capacity is stated to be 100 tons a day. The firm ships ground barite to oil-well drillers in the West and Southwest.

The major use of barite in 1946 was in weighting rotary drilling muds in high-pressure oil and gas areas. The expectation earlier in the year that 1946 would set another record for shipments to well drillers was not realized, and 1945 remains the historical high with 413,620 tons declining to 374,799 in 1946. This decrease of 39,000 tons in the drilling market apparently had little effect on producers' schedules, for an increase of 36,000 tons was noted in shipments to lithopone and chemical manufacturers over 1945 receipts, and also glass and filler shipments were up 15,000 tons. Exports to South American oil fields were sizable in 1946, but data cannot be published. Summing up, shipments to all consumers was 2 percent greater in 1946 than in 1945.

In the chart, following page 2, annual trends in the barite industry are shown from 1938 to 1942, the yearly data being divided by four to provide averages commensurate with the quarterly data which follow for 1943 to date. Exports if any, are included in the curve labeled "Shipments for filler and miscellaneous uses".

Imports of crude barite into the United States for consumption, in 1946 by by quarters and by countries

	First quarter		Second quarter	
	Short tons	Value	Short tons	Value
Canada	---	---	13,760	$78,181
[illegible]	114	$646	---	---
	114	646	13,760	78,181

	Third quarter		Fourth quarter		Total for year	
	Short tons	Value	Short tons	Value	Short tons	Value
Canada	19,541	$122,007	10,808	$68,651	44,109	$268,839
Mexico	---	---	439	4,782	553	5,428
	19,541	122,007	11,247	73,433	44,662	274,267

There were no receipts of ground barite during 1946.

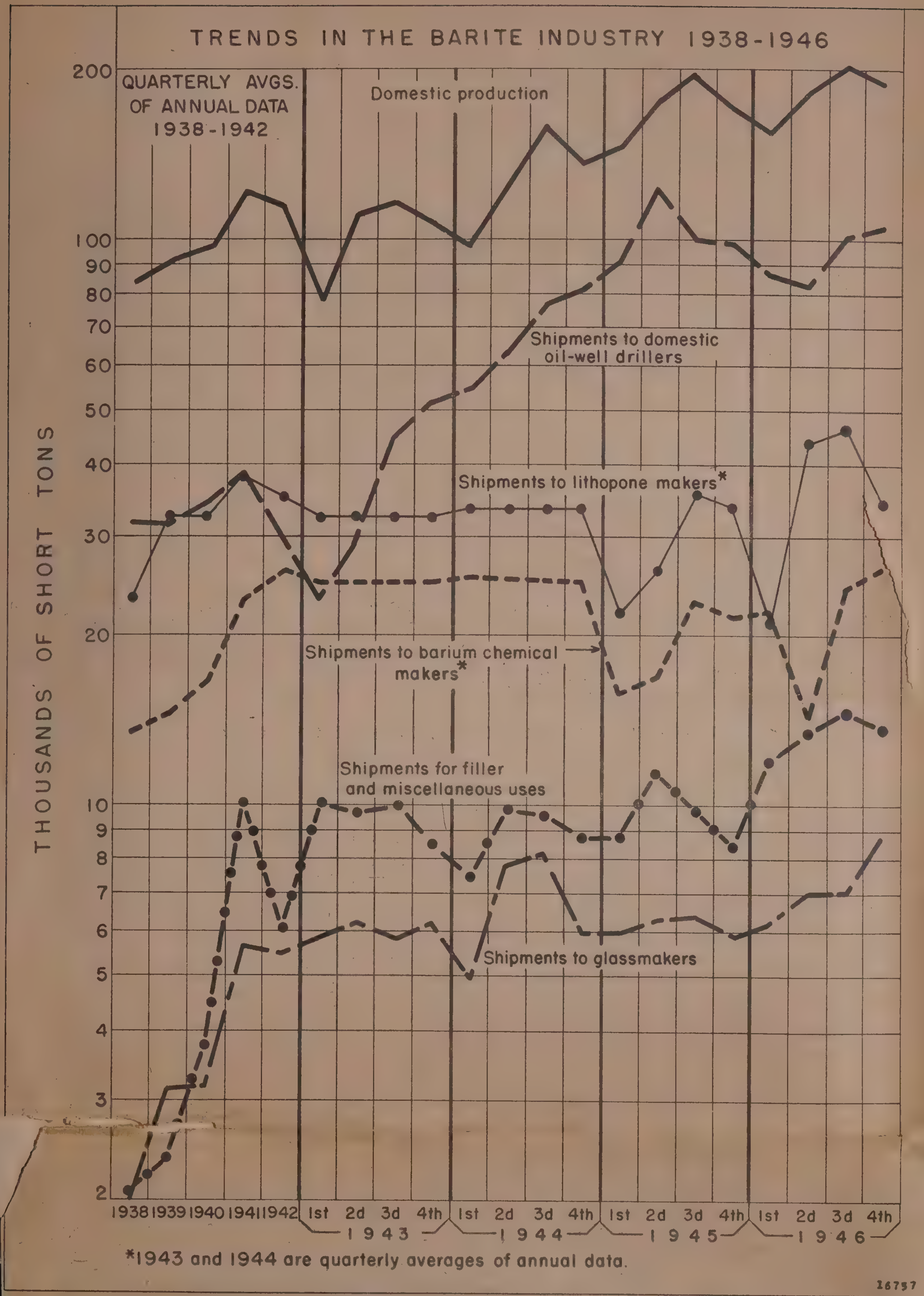
Prepared by Charles L. Harness and F. M. Barsigian, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics & Statistics Branch.

Production, distribution, and stocks of barite during the first, second, third, and fourth quarters of 1945 and 1946, in short tons

	First quarter		Second quarter		Third quarter		Fourth quarter		Total for year	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
Production of barite by States:										
Arkansas	55,613	67,662	66,643	67,166	68,288	75,701	70,118	77,757	260,662	288,286
Georgia	28,139	11,670	27,881	1/ 19,104	31,278	24,642	22,184	14,774	109,482	70,190
Missouri	46,234	62,294	57,197	70,561	62,278	1/ 68,530	55,329	72,233	221,038	273,618
Tennessee	7,713	3/12,964	8,546	5/ 23,161	9,473	9,642	7,743	9,007	33,475	33,628
Other States	2/ 7,578		4/17,110		4/ 25,836	5/ 22,258	4/ 14,971	6/ 14,793	4/ 65,495	6/ 58,197
	145,277	154,590	177,377	1/179,992	197,153	1/200,773	170,345	188,564	690,152	723,919
Estimated distribution of domestic barite by uses:										
Well drilling	91,781	86,551	122,115	82,776	100,684	100,597	99,040	104,875	413,620	374,799
Chemicals	15,724	22,030	16,801	14,404	23,112	24,117	21,606	26,224	77,243	86,775
Lithopone	22,075	21,162	26,027	43,526	36,896	1/ 45,542	33,452	34,248	118,450	144,478
Glass	5,991	6,229	6,388	7,068	6,422	7,142	5,939	8,761	24,740	29,200
Filler	8,833	10,696	11,484	13,356	9,855	11,567	8,453	13,142	38,625	48,761
Other (includes exports)	--	1,411	--	56	--	2,927	--	476	--	4,870
	144,404	148,079	182,815	161,186	176,969	1/191,892	168,490	187,726	672,678	688,883
Production of ground & crushed barite	109,172	104,813	130,402	1/103,548	116,854	123,854	1/117,575	123,226	1/474,003	455,441
Crude barite stocks end of quarter, held by producers, crushers, and grinders of crude barite	22,069	36,623	21,109	60,769	37,925	61,925	32,510	61,731	--	--

1/ Revised figure. 2/ Includes California and North Carolina. 3/ Includes California. 4/ Includes California, Nevada, and North Carolina.

5/ Includes California and Nevada. 6/ Includes Arizona, California, and Nevada.



TRENDS IN THE BARITE INDUSTRY 1938-1946

*1943 and 1944 are quarterly averages of annual data.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

MAR 25 1947
UNIVERSITY OF ILLINOIS

J. A. KRUG, Secretary **R. R. SAYERS, Director**

For release March 27, 1947.

Mineral Market Report
M. M. S. No. 1503 and
Monthly Zinc Report No. 36

ZINC INDUSTRY IN 1946 - PRELIMINARY

Smelter production of slab zinc continued to decline in 1946 but was at a higher level than in prewar years, according to the Bureau of Mines, United States Department of the Interior. The outputs of primary and redistilled secondary slab zinc decreased 5 percent and 11 percent, respectively, owing largely to labor strikes and a continued shortage of mine, mill, and smelter labor. The declining domestic smelter output was partially offset, however, by an 8-percent gain in slab zinc imports the quantity of which in 1946 was the greatest in the history of the zinc industry. Imports of zinc in ores and concentrates dropped 29 percent from 1945. Approximately 790,400 tons of slab zinc were consumed by industry in 1946, a 7-percent decline from 1945, and 11 percent under the record attained in 1944. Galvanizing continued as the principal use of slab zinc. The market price from Prime Western grade zinc, St. Louis, at year-end was 10.50 cents per pound, a net gain of 2.25 cents over the ceiling price in effect at the beginning of the year.

This report which summarizes statistics on the zinc industry for 1946 is a part of the regular monthly series of zinc reports. A review of December comparable with previous months is given below and is followed by a preliminary review of the zinc industry for 1946.

Zinc Oxide, Zinc Dust, and Slab Zinc in December 1946

The production of zinc oxide in December totaled 21,017 short tons, the greatest monthly output since the beginning of the Bureau's monthly survey in May 1941 and greater than the average monthly production of any year on record. The December output increased 9 percent over November, continuing the upward trend in effect since September 1946.

Total stocks of zinc oxide at producers' plants were slightly (1 percent) under those on hand November 30. Inventories of zinc dust at producers' plants remained virtually unchanged, whereas stocks of slab zinc at domestic smelters dropped 10 percent.

Prepared by Richard H. Mote and Esther B. Miller, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Consumption of slab zinc declined 3 percent from November. Slight gains in the volume of zinc consumed in zinc-base alloys, brass products, and rolled zinc were insufficient to offset decreases in other industry groups, notably galvanizing.

Receipts of slab zinc at consumers' plants continued to increase. An 8-percent gain over November receipts established a new high level for 1946.

Secondary slab zinc production in December at 9 operating secondary redistillation plants amounted to 2,557 tons including 941 tons of Intermediate, 343 tons of Brass Special, and 1,273 tons of Prime Western. Production and shipments of redistilled secondary slab zinc in December were approximately equal. Outputs of Intermediate and Brass Special grades increased but production of Prime Western grade declined.

Imports of zinc ore in November and December, all from Peru, Canada, Mexico, and Bolivia, declined 12 percent and 18 percent, respectively, from the October figure. Imports of slab zinc continued to rise in November and December; the quantity received in December was the greatest since April 1946. Exports of 13,323 tons of slab zinc in November established a high level for 1946. Slab zinc exports in December slumped to 8,658 tons.

Producers' stocks, production, and shipments of zinc oxide
(lead-free and leaded, by grades) in December 1946, and total (all oxide)
January-December 1946, in short tons

	Stocks at beginning of month	Production during the month	Shipments during the month	Stocks at end of month
January: Total all oxide........	31,096	15,586	17,545	29,137
February: Total all oxide........	29,137	16,145	14,970	30,312
March: Total all oxide........	30,312	19,028	17,599	31,741
April: Total all oxide........	31,741	17,619	18,205	31,155
May: Total all oxide........	31,155	17,686	18,828	30,013
June: Total all oxide........	30,013	17,830	18,786	29,057
July: Total all oxide........	29,057	17,592	20,795	25,854
August: Total all oxide........	25,854	16,915	19,918	22,851
September: Total all oxide........	22,851	17,456	17,686	22,621
October: Total all oxide........	22,621	17,879	21,318	19,182
November: Total all oxide........	19,182	1/19,280	19,019	19,443
December: Total all oxide........	19,443	21,017	21,207	19,253
Total...............	xxxxxx	214,033	225,876	xxxxxx
Monthly average.....	xxxxxx	17,836	18,823	xxxxxx
December:				
Lead-free:				
American process - Ore and scrap residues 2/..	1/3/13,005	9,714	9,891	3/12,828
French process - Slab zinc, remelt & scrap.	696	2,476	2,527	645
Other processes - Dust residues & scrap......	1/ 206	1,059	878	387
Total..........................	13,907	13,249	13,296	13,860
Leaded:				
35 percent lead and under........	5,281	6,412	6,571	5,122
Over 35 percent lead............	255	1,356	1,340	271
Total..........................	5,536	7,768	7,911	5,393
Total - all oxide...........	19,443	21,017	21,207	19,253

1/ Revised figure. 2/ Includes ore residues. 3/ Includes small tonnage of French process oxide not separable.

Raw materials used in the production of zinc oxide
in December 1946, in short tons 1/

Materials used	Stocks Nov. 30 Zn content	Received during Dec. Zn content	Consumed during December		Stocks Dec. 31 Zn content
			Gross weight	Zinc content	
Zinc ore.....	2/19,461	9,099	20,773	8,420	20,140
Ore residues.	9,042	2,621	6,391	3,530	8,133
Total 3/	2/28,503	11,720	27,164	11,950	28,273

1/ Excludes slab zinc, zinc dust residues, secondary residues, scrap zinc and remelt zinc.

2/ Revised figure.

3/ Totals do not compare with totals shown prior to September 1946.

Production, shipments and stocks of zinc dust
in January - December 1946, in short tons 1/

	Stocks at beginning of month	Produced during month	Consumed at own plant	Shipped during month	Stocks at end of month
January............	1,802	1,925	34	1,837	1,856
February...........	1,856	1,954	41	2,165	1,604
March..............	1,604	2,298	63	2,426	1,413
April..............	1,413	2,533	63	2,312	1,571
May................	1,571	2,602	68	2,586	1,519
June...............	1,519	2,410	49	2,488	1,392
July...............	1,392	2,180	65	2,157	1,350
August.............	1,350	2,367	89	2,074	1,554
September..........	1,554	2,471	73	2,169	1,783
October............	1,783	2,641	85	2,562	1,777
November...........	1,777	2,678	70	2,910	1,475
December...........	1,475	2,515	85	2,433	1,472
Total.........	xxxxx	28,574	785	28,119	xxxxx
Monthly average	xxxxx	2,381	65	2,343	xxxxx

1/ Excludes production and stocks of zinc dust made solely for use within a producer's plant.

Production, shipments, and stocks of secondary (redistilled) slab zinc at secondary smelters in January - December 1946, in short tons

	Stocks at beginning of month	Produced during month 1/	Shipped during month 2/	Stocks at end of month
January	1,452	2,843	3,167	1,128
February	1,128	2,269	2,268	1,129
March	1,129	1,934	1,782	1,281
April	1,281	1,556	2,189	648
May	648	1,666	1,784	530
June	530	1,755	1,855	430
July	430	2,323	2,233	520
August	520	2,241	2,080	681
September	681	2,186	2,246	621
October	621	2,389	2,529	481
November	481	3/2,386	3/2,094	3/ 773
December	773	2,557	2,575	755
Total	xxxxx	26,105	26,802	xxxxx
Monthly average	xxxxx	2,175	2,234	xxxxx

1/ Figures exclude redistilled slab zinc at primary smelters; 1,772 tons in December and 1,751 tons (revised) in November.
2/ In December 12 tons were consumed in own plant.
3/ Revised figure.

Total smelter production, shipments, and stocks of slab zinc in January - December 1946, in short tons 1/

Month	Stocks at beginning of month	Produced during month	Shipped during month				Stocks at end of month
			Domestic	Export and drawback	Government account	Total	
January	260,538	67,229	49,024	2,326	9,140	60,490	267,277
February	267,277	62,395	42,339	886	12,621	55,846	273,826
March	273,826	72,809	67,355	2,324	15,210	84,889	261,746
April	261,746	61,856	62,003	5,676	6,706	74,385	249,217
May	249,217	63,591	61,612	4,120	4,989	70,721	242,087
June	242,087	60,007	52,469	2,550	6,841	61,860	240,234
July	240,234	60,321	59,570	5,559	5,340	70,469	230,086
August	230,086	60,866	44,757	7,678	686	53,121	237,831
September	237,831	59,546	61,075	5,323	474	66,872	230,505
October	230,505	65,244	72,814	2,248	0	75,062	220,687
November	220,687	2/68,044	2/76,818	15,648	0	2/92,466	2/196,265
December	196,265	71,399	79,144	12,300	0	91,444	176,220
Total	xxxxxxx	773,307	728,980	66,638	62,007	857,625	xxxxxxx
Monthly average	xxxxxxx	64,442	60,748	5,553	5,167	71,469	xxxxxxx

1/ Tabulation based upon data reported by the American Zinc Institute and information received by the Bureau of Mines from secondary redistillers not members of the American Zinc Institute.
2/ Revised figure.

Consumption of slab zinc in November and December 1946 according to products made by industry groups and cumulative total, January - December 1946, in short tons

	November	December	Jan.-Dec. total
Galvanizers:			
Sheet & strip..........	10,162	9,011	113,760
Wire & wire rope.......	4,113	3,894	43,829
Tube & pipe............	6,054	4,929	61,449
Fittings...............	1,012	914	11,239
Other..................	8,975	8,403	88,912
Total............	30,316	27,151	319,189
Zinc-base alloys:			
Die castings...........	19,472	18,032	199,530
Stamping dies & zinc alloy rod...........	403	1,972	5,313
Slush & sand castings..	18	106	510
Total............	19,893	20,110	205,353
Brass mills:			
Sheet, strip & plate...	6,629	6,655	66,097
Rod & wire.............	4,832	5,011	52,603
Tube...................	1,892	2,072	18,702
Castings & billets.....	62	102	1,117
Copper-base ingots.....	23	49	323
Other copper-base products............	8	15	82
Total............	13,446	13,904	138,924
Brass ingot makers & foundries:			
Tube...................	85	41	404
Castings & billets.....	339	297	3,593
Copper-base ingots.....	382	330	3,667
Other copper-base products............	67	77	767
Total............	873	745	8,431
Rolling mills (rolled zinc)..................	7,783	8,299	92,294
Oxide plants & Other 1/..	2,319	2,277	26,213
Total consumed...........	74,630	72,486	790,404

1/ Includes zinc used for slush castings, wet batteries, desilverizing lead, light metal alloys and other miscellaneous uses.

Consumption of slab zinc in December 1946
by industry according to grade, in short tons

	Special High Grade	Regular High Grade	Intermediate	Brass Special	Selected	Prime Western	Remelt	Total
Galvanizers..	1,117	1,797	837	1,355	51	21,835	159	27,151
Zinc-base alloys......	19,750	352	0	0	0	0	8	20,110
Brass mills..	2,167	7,827	555	843	303	2,209	0	13,904
Ingot makers & foundries.	91	58	103	221	2	226	44	745
Rolling mills	283	2,659	1,717	3,618	0	22	0	8,299
Zinc oxide & Other.......	462	1,574	38	1	0	167	35	2,277
Total...	23,870	14,267	3,250	6,038	356	24,459	246	72,486

Consumers' stocks of slab zinc by industry for November 30, 1946 and December 31, 1946, and receipts and consumption during December, in short tons

	Stocks at plants on Nov. 30 1/		Received during Dec.		Consumed during Dec.		Stocks at plants on Dec. 31		Inventory change Nov. 30 to Dec. 31 (percent)
	Amount	Percent total	Amount	Percent total	Amount	Percent total	Amount	Percent total	
Galvanizers	35,675	46.2	33,591	39.1	27,151	37.5	42,115	46.5	+ 18.1
Zinc-base alloys 2/.	16,466	21.3	24,151	28.1	20,110	27.7	20,507	22.6	+ 24.5
Brass mills	15,151	19.6	16,984	19.8	13,904	19.2	18,231	20.1	+ 20.3
Ingot makers & foundries	1,615	2.1	632	0.7	745	1.0	1,502	1.7	- 7.0
Rolling mills......	7,158	9.3	7,705	9.0	8,299	11.5	6,564	7.2	- 8.3
Oxide plants & Other....	1,133	1.5	2,867	3.3	2,277	3.1	1,723	1.9	+ 52.1
Total.	77,198	100.0	85,930	100.0	72,486	100.0	90,642	100.0	+ 17.4

1/ Revised figures.

2/ Includes die castings, stamping dies, zinc alloy rod, slush and sand castings, etc.

Imports and exports of zinc in 1945, first, second and third quarters, October, November and December 1946, in short tons [1]

	1945	First quarter	Second quarter	Third quarter	October	November	December	Total 1946 [2]
Imports (general):								
Ore (zinc content)........	381,719	64,394	85,748	65,197	20,990	18,499	17,228	272,056
Slab zinc........	97,116	[3]41,645	28,673	13,982	4,511	6,313	9,619	104,743
Old, dross & skimmings (zinc content)........	7,331	1,898	815	690	253	290	191	4,137
Exports:								
Slab zinc........	7,782	4,070	6,344	4,691	345	13,323	8,658	37,431

[1] Figures on imports and exports compiled from records of the United States Department of Commerce.

[2] Subject to revision.

[3] Revised figure.

Preliminary Review of Zinc Industry in 1946

Production. - Total domestic production of slab zinc including primary metal from domestic and foreign ores and redistilled secondary from scrap (based on producers' monthly reports for twelve months), the smallest since 1940, dropped 5 percent below the 1945 output. Of the 773,300 tons of slab zinc produced in 1946 (zinc recovered by remelting is excluded), approximately 94 percent was primary slab zinc and 6 percent redistilled secondary slab zinc.

The domestic mine production of recoverable zinc (including that recovered as zinc pigments and salts directly from ore) continued to decline in 1946 for the fourth consecutive year and dropped to the lowest level of any year since 1938. Preliminary estimates of mine production in 1946 indicate an output of 565,787 short tons, a decrease of 8 percent from 1945. The preliminary report on mine production of zinc in the United States in 1946 (United States Bureau of Mines Mineral Market Report M. M. S. No. 1494, January 24, 1947) gives additional details on mine production.

Details on the production of zinc pigments and salts are given in the preliminary report on lead and zinc pigments and zinc salts in 1946 (United States Bureau of Mines Mineral Market Report M. M. S. No. 1495, January 30, 1947).

All previous records for the production of zinc dust were shattered in 1946, the total output being 8 percent above the former high point reached in 1944, and 10 percent over the 1945 production. Production and shipments of zinc dust in 1946 were nearly in balance and, as the amount consumed at manufacturers' plants was slightly greater (3 percent of output) than in recent years, producers' stocks showed a moderate decline during the year.

Stocks. - Following a general gain during the first two months of the year inventories of slab zinc at producers' plants declined steadily, except for a slight gain in August, and at the year-end were 31 percent under the inventories on January 1.

Consumers' stocks on December 31 were 16,671 tons (23 percent) greater than at the beginning of the year. Inventories increased abruptly from the low point at the first of the year to a high of about 116,900 tons on May 31, followed by a general downward trend through October, a slight gain in November, and a sharp rise in December. At the average monthly rate of consumption during 1946, consumer stocks on hand December 31 were sufficient for about forty-five days' requirements.

Consumption. - Slab zinc (primary and redistilled secondary) available to domestic consumers in 1946 amounted to about 858,000 tons, a decrease of 2 percent from the 875,315 tons calculated available for 1945. Actual consumption of 450 plants during 12 months of 1946 gives a figure of 790,400 tons which includes 4,232 tons of remelt zinc. A comparison of the calculated figure of slab zinc available to consumers and actual consumption indicates that the coverage of the monthly survey is about 92 percent.

Galvanizing continued as the principal use of slab zinc, although the quantity consumed for this purpose in 1946 declined 5 percent. The use of slab zinc for brass products fell off sharply, owing largely to labor strikes at the brass mills and the increasing use of brass scrap in lieu of virgin metal. The quantity of zinc used for zinc-base alloys reached an all-time high of 205,353 tons, a gain of 57 percent over 1945. The volume of slab zinc consumed for rolled products fell 5 percent short of equalling the 1945 figure.

Foreign trade. - Total imports of zinc in ore and concentrates in 1946 declined 29 percent from 1945. Of the 272,056 tons of zinc imported in ores and concentrates approximately 47 percent came from Mexico, 21 percent from Canada, 18 percent from Peru, 10 percent from Bolivia, 3 percent from Argentina, and 1 percent from Australia. Estimates of slab zinc imports indicate an increase of 8 percent over 1945 and the greatest tonnage of any year in the history of the zinc industry. A 57-percent decrease in imports from Mexico were more than offset by an 83-percent gain in the quantity of slab zinc imported from Canada. Exports of slab zinc increased sharply to 37,431 tons.

Zinc-reduction plants. - During 1946 there were 21 active primary zinc-reducti plants in operation, of which 12 operated with horizontal retorts exclusively, 1 with both horizontal and vertical retorts, 3 with vertical retorts exclusively (one electrothermic), and 5 with electrolytic methods. Labor strikes continued to restrict metal production throughout the year. In January the smelters at East St. Louis and Monsanto, Illinois were strikebound. The Henryetta, Oklahoma smelter was closed by strike from April until the latter part of September. In Pennsylvani the Langeloth smelter was closed from June to October and production was cut at the Josephtown plant owing to the power strike in the Pittsburgh area. The smelter at Danville, Illinois, closed in March and did not operate the balance of the year.

Prices. - The base ceiling price established by the Office of Price Administration of 8.25 cents a pound for Prime Western grade slab zinc at St. Louis remained unchanged through June 30. A bill to extend the OPA was vetoed by the President on June 29 and on July 3 following expiration of the OPA and the collapse of the Premium Price Plan the price of zinc advanced to 9.50 cents, St. Louis. With the reestablishment of the OPA by legislative action on July 25, the former ceiling price of 8.25 cents became effective and prevailed until October 14 when the OPA announced an upward revision in the ceiling price of 1 cent per pound, establishing the market at 9.25 cents, St. Louis. The decontrol order issued by the President on November 9 included the removal of ceiling prices from all metals and opened the way for a further price advance to 10.50 cents, St. Louis on November 12.

Government regulations. - Except for a few minor regulations, the zinc industr operated throughout 1946 free of Government controls. At the end of the year Priorities Regulation No. 32 limiting manufacturers' inventories of all grades of slab zinc and die-cast alloy to thirty days' requirements or a practicable working inventory, whichever is less, remained operative.

Distilled and electrolytic zinc, primary and secondary, produced in the United States, 1945-1946, in short tons

Classified according to method of reduction

Year	Electrolytic primary	Distilled primary	Redistilled secondary		Total
			At primary smelters	At secondary smelters	
1945..........	269,924	494,637	21,205	28,037	813,803
1946 (preliminary)	272,400	457,000	17,900	26,000	773,300

Classified according to grade

Year	Special High Grade	Regular High Grade	Intermediate	Brass Special	Selected	Prime Western	Total
1945..........	220,241	191,639	49,106	75,749	17,367	259,701	813,803
1946 (preliminary)	234,700	180,400	29,300	77,600	16,900	234,400	773,300

Slab zinc available for shipment to consumers, in 1945-1946, in short tons

	1945	1946 (preliminary)
Supply: Stocks at primary smelters January 1	233,044	254,765
Stocks at secondary plants January 1	652	1,451
Production - Primary	764,561	729,400
Secondary redistilled	49,242	43,900
Imports of slab zinc	97,116	104,743
Total available	1,144,615	1,134,259
Withdrawn:		
Exports of slab zinc	7,782	37,431
Shipments for Government account	5,302	62,007
Stocks at primary smelters December 31	254,765	176,100
Stocks at secondary plants December 31	1,451	650
Total withdrawn	269,300	276,188
Available to consumers	875,315	858,071

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

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FOR RELEASE March 21, 1947. MINERAL MARKET REPORT, NO. MMS 1504.

RECORD DEMAND IN 1945 CAUSED A 6 PERCENT GAIN IN NATURAL GAS PRODUCTION

Marketed production of natural gas reached a new high of 3,918,686 million cubic feet in 1945, 6 percent above the 1944 record, according to the Bureau of Mines, U.S. Department of the Interior. The principal gains in output were reported in Texas (186 billion cubic feet), Oklahoma (47 billion), New Mexico (17 billion), and Louisiana (8 billion). Production declined materially in Kansas and in the Appalachian region.

Each of the three major classes of consumers contributed to the 6 percent gain in total consumption to 3,900,479 million cubic feet. Domestic consumers increased their use of natural gas 8 percent over 1944, commercial consumers 4 percent, and all industrials 5 percent. Miscellaneous industrial use declined 14 billion cubic feet owing to a drop of about 34 billion cubic feet in consumption at electric public-utility power plants. Gains were reported by all other classes of industrial consumers, led by carbon-black manufacturers and oil and gas-field operators.

The several classes of consumers used the following quantities of natural gas in 1945 in millions of cubic feet: domestic 607,400, commercial 230,099, oil and gas field 916,952, carbon black 431,830, petroleum refineries 338,458, portland-cement plants 38,349, and miscellaneous industrial, including electric public-utility power plants, 1,337,391.

The average value of natural gas at the wells declined to 4.9 cents a thousand cubic feet in 1945 from 5.1 cents in 1944 in reflection of the increasing dominance of the Southwestern States as suppliers of natural gas to the nation's consumers. The average value at points of consumption also declined from 21.5 cents to 21.4 cents owing to lower average values for domestic and industrial gas. The average consumption per domestic and commercial meter was 70,687 cubic feet in 1945, compared with 68,000 cubic feet in 1944.

The number of domestic consumers increased 3 percent during 1945 to 10,959,000 and commercial consumers increased 5 percent to 889,000. Of these, 8,455,000 domestic and 755,000 commercial used 100 percent natural gas and the remainder used natural mixed with manufactured gas.

The interstate transportation of natural gas again increased (7 percent) to 1,105,760 million cubic feet. Of this total, 18,016 million cubic feet were piped to Mexico and 191 million to Canada.

A table of estimated gross production and disposition of natural gas in 1945, by States, is added to this report. It indicates that approximately 4,814,894 million cubic feet of gas (estimated gross production less repressuring and net stored) were withdrawn from available gas reserves during 1945.

Prepared under the supervision of A. G. White, Petroleum Economics Division, Economics and Statistics Branch.

INTERSTATE TRANSPORTATION AND EXPORTS OF NATURAL GAS IN 1945

State from which gas was transported	State to which gas was transported	Millions of cu.ft.
Arkansas	Louisiana	833
Colorado	Utah	3,907
	Wyoming	5
		3,912
Illinois	Indiana	53
Indiana	Illinois	19
	Kentucky	57
		76
Kansas	Colorado	987
	Illinois	3,734
	Indiana	6,190
	Iowa	8,953
	Kentucky	247
	Michigan	10,200
	Minnesota	16,288
	Missouri	7,745
	Nebraska	14,999
	Ohio	7,821
	Oklahoma	908
	South Dakota	1,851
		79,923
Kentucky	D. C.	6,883
	Indiana	220
	Maryland	1,521
	Ohio	15,061
	Pennsylvania	22,182
	Virginia	1,023
	West Virginia	17,120
		64,010
Louisiana	Alabama	39,636
	Arkansas	34,955
	Florida	7,320
	Georgia	30,934
	Illinois	19,941
	Mississippi	31,827
	Missouri	21,257
	Tennessee	23,579
	Texas	19,269
		228,718
Mississippi	Alabama	32
	Florida	5
		37
Montana	North Dakota	2,640
	South Dakota	2,860
		5,500
New Mexico	Arizona	22,488
	Colorado	343
	Mexico	3,281
	Texas	9,505
		35,617
New York	Canada	31
	Pennsylvania	3,601
		3,632
North Dakota	South Dakota	217
Ohio	West Virginia	1,679
Oklahoma	Arkansas	4,612
	Illinois	2,402
	Indiana	3,985
	Iowa	118
	Kansas	57,984
	Kentucky	157
	Michigan	6,541
	Minnesota	213
	Missouri	25,740
	Nebraska	819
	Ohio	5,030
	South Dakota	24
	Texas	14,409
		122,034
Pennsylvania	Canada	160
	Maryland	556
	New York	23,999
	Ohio	103
	West Virginia	377
		25,195
Texas	Alabama	3,749
	Arkansas	5,864
	Colorado	32,545
	Georgia	4,981
	Illinois	78,660
	Indiana	28,359
	Iowa	18,723
	Kansas	36,386
	Kentucky	5,689
	Louisiana	10,984
	Maryland	172
	Mexico	14,735
	Michigan	20,979
	Minnesota	19,429
	Mississippi	1,920
	Missouri	17,227
	Nebraska	10,834
	New Mexico	2,053
	Ohio	38,960
	Oklahoma	13,523
	Pennsylvania	13,844
	South Dakota	2,201
	Tennessee	809
	Virginia	248
	West Virginia	22,591
	Wyoming	979
		406,444
Virginia	Tennessee	21
West Virginia	Kentucky	2,948
	Maryland	335
	Ohio	56,995
	Pennsylvania	52,472
	Virginia	485
		113,235
Wyoming	Montana	3,246
	Nebraska	1,583
	Utah	9,795
		14,624
TOTAL UNITED STATES		1,105,760
Interstate deliveries in the United States		1,087,553
Exports to Canada		191
Exports to Mexico		18,016

SUMMARY OF NATURAL GAS STATISTICS, 1945

State	Production			Consumption											Gas used at electric public-utility power plants (Millions of cu. ft.) 1/
				Domestic			Commercial			Industrial					
										Field (drilling, pumping, etc.)		All other industrial			
												Millions of cu. ft.			
	Millions of cu. ft.	Average value at wells per M. cu. ft. (cents)	Average value at points of consumption per M. cu. ft. (cents)	Thousands of consumers	Millions of cu.ft.	Average value at points of consumption per M. cu. ft. (cents)	Thousands of consumers	Millions of cu.ft.	Average value at points of consumption per M. cu. ft. (cents)	Millions of cu.ft.	Value at points of consumption (thousands of dollars)	Fuel at petroleum refineries	Other including electric public-utility power plants	Value at points of consumption (thousands of dollars)	
Alabama.....	-	-	-	51	3,277	71.8	5	1,426	45.9	-	-	-	38,714	6,467	6,557
Arizona.....	-	-	-	53	2,584	85.3	6	2,552	36.5	-	-	-	17,352	3,529	2,091
Arkansas....	46,600	2.5	13.2	96	9,239	47.5	16	5,152	34.6	19,332	929	8,205	49,270	4,959	7,727
California..	502,442	6.0	27.1	1,967	115,944	66.5	169	56,492	39.0	136,159	8,839	64,101	129,746	28,312	35,097
Colorado....	4,914	4.9	27.1	115	9,255	70.4	13	3,102	50.1	745	114	1	21,774	3,236	5,375
Georgia.....	-	-	-	106	7,305	83.3	9	4,296	37.1	-	-	-	24,314	4,480	13,707
Illinois....	16,663	6.1	17.3	1,364	25,432	114.9	72	6,682	77.8	15,544	838	401	73,307	17,379	1,657
Indiana.....	1,543	11.0	79.3	237	6,667	122.8	14	1,938	84.5	343	35	648	30,678	8,883	3,968
Iowa	-	-	-	158	6,582	87.6	14	2,465	59.0	-	-	-	18,747	3,240	5,975
Kansas......	145,959	5.1	33.6	264	25,148	58.4	32	12,501	31.7	18,471	1,050	10,561	93,725	11,641	26,089
Kentucky....	81,714	15.3	45.4	198	12,356	57.1	19	3,863	46.5	2,358	364	66	8,159	2,334	-
Louisiana...	542,789	3.6	16.7	255	14,437	60.7	27	8,896	30.5	93,880	3,903	53,029	155,646	18,402	42,516
Michigan....	21,874	13.2	67.9	905	32,342	97.6	39	5,262	82.0	1,782	240	53	20,155	9,596	14
Minnesota...	-	-	-	183	9,073	69.0	8	2,579	40.4	-	-	-	24,278	4,406	6,681
Mississippi.	4,587	4.7	23.5	70	5,165	69.9	11	4,447	34.7	5,003	459	-	23,682	3,381	3,288
Missouri....	90	7.8	52.2	457	20.661	85.8	31	4,183	57.3	46	4	-	47,169	8,981	14,714
Montana.....	31,829	4.7	27.2	51	8,547	46.4	5	5,101	30.1	1,674	87	2,151	12,102	1,966	1,191
Nebraska....	-	-	-	138	8,120	69.0	12	2,842	48.0	-	-	9	17,264	2,983	3,865
New Mexico..	105,023	1.4	15.4	40	3,576	66.6	5	3,438	32.4	29,571	530	2,542	32,332	2,843	6,685
New York....	9,210	28.5	64.3	437	19,875	79.9	37	3,961	69.3	98	25	29	5,614	3,146	839
Ohio........	49,967	17.8	52.0	1,340	86,124	63.0	112	18,126	56.3	1,166	261	1	66,841	26,308	314
Oklahoma....	357,530	3.6	18.5	308	29,975	45.7	36	18,024	26.9	111,009	4,347	23,034	67,885	8,584	22,296
Pennsylvania	82,188	24.5	52.4	705	46,473	63.9	48	9,206	52.9	5,753	1,701	660	87,000	29,165	12
Tennessee...	10	10.0	50.0	62	5,233	71.3	8	4,683	35.4	-	-	-	14,503	2,189	4,416
Texas.......	1,711,401	2.6	14.8	844	50,775	64.0	95	26,090	36.8	453,207	13,586	167,034	651,034	48,362	104,147
W. Virginia	160,225	13.7	42.2	215	24,272	35.7	20	5,151	34.0	12,690	2,437	1,001	45,643	11,001	1,607
Wyoming.....	35,282	4.0	22.4	26	4,455	47.4	4	2,539	31.9	8,115	341	3,940	2,593	747	332
Other States	6,846	5.0	26.6	314	14,508	76.7	22	5,102	48.2	6	(2/)	992	28,043	4,891	5,030
Total, 1945	3,918,686	4.9	21.4	10,959	607,400	68.3	889	230,099	42.4	916,952	40,090	338,458	1,807,570	281,411	326,190
1944	3,711,039	5.1	21.5	10,669	562,183	69.1	845	220,747	41.7	855,180	36,868	3/315,311	3/1,743,042	276,907	359,745

1/ Federal Power Commission: Figures include gas other than natural, impossible to segregate and therefore shown separately from main table.
2/ Less than $500. 3/ Revised figures.

GROSS PRODUCTION AND DISPOSITION OF NATURAL GAS IN THE UNITED STATES, BY STATES, IN 1945, IN MILLIONS OF CUBIC FEET

16854

State	Estimated Production 1/			Estimated Disposition			
	From gas wells	From oil wells	Total	Marketed production	Repressuring	Stored in ground (net)	Losses and waste 2/
Arkansas........	39,000	37,000	76,000	46,600	11,400	250	17,750
California......	188,000	446,000	634,000	502,442	102,724	144	28,690
Colorado........	4,200	1,800	6,000	4,914	-	-	1,086
Illinois........	500	49,500	50,000	16,663	7,417	415	25,505
Indiana.........	1,100	1,400	2,500	1,543	564	3/ 345	427
Kansas..........	107,000	46,000	153,000	145,959	2,032	3/ 791	11,718
Kentucky........	83,000	11,000	94,000	81,714	701	3/ 286	8,325
Louisiana.......	618,000	180,000	798,000	542,789	131,812	-	123,399
Michigan........	18,000	7,000	25,000	21,874	-	(-) 201	3,327
Mississippi.....	1,900	6,750	8,650	4,587	-	-	4,063
Missouri........	77	23	100	90	-	-	10
Montana.........	30,300	2,200	32,500	31,829	-	-	671
New Mexico......	33,000	107,000	140,000	105,023	7,621	673	26,683
New York........	10,150	250	10,400	9,210	-	3/ 595	589
Ohio............	51,500	3,500	55,000	49,967	10	3/ 4,529	5,923
Oklahoma........	249,000	177,000	426,000	357,530	15,973	6,464	40,362
Pennsylvania....	85,500	4,500	90,000	82,188	2,233	3/ 5,181	4,721
Texas...........	2,160,000	900,000	3,060,000	1,711,401	767,140	-	572,430
Utah............	6,700	-	6,700	6,562	-	-	138
West Virginia...	173,500	8,500	182,000	160,225	924	3/ 5,785	15,115
Wyoming.........	27,000	25,000	52,000	35,282	11,400	78	5,240
Other States....	4/ 300	30	330	294	-	-	35
Total.........	3,887,727	2,014,453	5,902,180	3,918,686	1,061,951	25,335	896,208

1/ Marketed production plus quantities used in repressuring, stored in ground, lost, and wasted (see footnote 2).

2/ Includes gas (Mostly residue gas) blown to the air and transportation losses but does not include direct waste on producing properties, except where data are available.

3/ Includes gas transported from other States.

4/ Florida, North Dakota, South Dakota, Tennessee, and Virginia.

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April 1947

MINERAL MARKET REPORT
M. M. S. No. 1505

BITUMINOUS COAL DISTRIBUTION

YEAR ENDED JUNE 30, 1946

Prepared by Economic Analysis Section, Coal Economics Division, Economics and Statistics Branch, Bureau of Mines, in cooperation with the Solid Fuels Administration for War.

The following tables, covering the year ended June 30, 1946, have been compiled from reports rendered by producers of bituminous coal and lignite for each mine producing an average of 50 tons or more per day, or mines having direct rail or river shipping facilities regardless of tonnage produced, dock operators, and transshippers of coal moving via the Great Lakes and tidewater, pursuant to Solid Fuels Administration for War Order No. 3 and Amendments Nos. 1, 2, and 3 thereto. Under that order, producers file monthly reports on Form S.F.A. No. 38 for bituminous coal and Form S.F.A. No. 56 (North Dakota, South Dakota, and Texas) for lignite, showing production and distribution of coal from each mine producing an average of 50 tons per day or more, or having direct rail or river shipping facilities, regardless of tonnage produced, identified by States and market areas of destination, uses, sizes, and methods of movement. Dock operators file similar distribution information monthly on Form S.F.A. No. 48 with respect to coal shipped from the docks. All persons ordering or directing the transshipment of coal at Lake or tidewater dumping piers file cargo manifests, invoices, summary reports, or other documents covering the movement of coal from the port of dumping to the port of receipt.

The data submitted in these tables have been abstracted from mechanical tabulations of the reports that have been rendered by the parties described and include such tonnages as were reported at the time the tabulations were closed. They have a coverage representing 93.4 percent of the total production. Production and distribution data not accounted for in the tables originate at mines with an average of less than 50 tons daily production, which have no direct rail or river shipping facilities, and from which reports are not required, together with tonnages from certain large mines and docks delinquent in filing.

It will be noted that certain tonnages described as "unknown" and "not reported" appear throughout the tables. These items represent the accumulation of tonnages for which respondents failed to report pertinent information such as district of origin, State of destination, size group, and use; replies to correspondence requesting such information had not been received at the time the tabulations were prepared.

Tonnages are shown in net tons of 2,000 pounds.

TABLE 1. - DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38, 48, AND 56, AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

In this table are shown (a) the total production for each producing district as reported on Forms S.F.A. Nos. 38 and 56, and (b) the total shipments to consumers, distributed by States of destination and uses. Destinations are not shown for railroad fuel. Only for byproduct and beehive coke oven and smithing use are destinations reported for truck shipments. The truck tonnages for which destinations were reported are included in the all-rail, river and ex-river data for statistical convenience.

Shipments from each producing district to State of destination and for each use therein are shown for coal moving all-rail, river, and ex-river for all uses except railroad fuel and in the case of coal for coking purposes and for smithing use, for all movements except Lake and tidewater. Following a subtotal of these tonnages, there are shown by producing districts the tonnages of railroad fuel shipments, tidewater and Lake shipments, shipments by truck, shipments to such distributors and wholesalers who failed to furnish information as to the final destination and use, shipments by private railroads, tramways and conveyors, tonnages of coal used in and around the mines (including coal used to produce coal, coal used by mine employees, and coal made into briquets or packaged fuel), other disposals by methods not specifically outlined, net change in mine inventories, and the total production reported.

Item 13 has the estimated residual part of truck production, the product of mines which are not required to report on Forms S.F.A. Nos. 38 and 56, for the year ended June 30, 1946. These estimates are based on the total production of truck mines during 1945. They represent approximate activity of this class of mine during the year ended June 30, 1946. The estimates represent total truck tonnages for 1945 less (a) tonnages included in rail, river, and ex-river movement for shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use, and (b) truck tonnage shown in Item 7.

In order to show the total coal distribution by States of destination by all movements, and by consumer uses, there has been included in this table a summary by States of destinations and uses of waterborne coal moving to consumers via the Great Lakes and tidewater. These data exclude shipments to storage docks that have not been reported as being transshipped to a consumer. As explained in the footnote to this section of the table, the tonnages shown represent the distribution of coal to consumers during the period reported that moved from the mines by Lake and tidewater. In the final column are shown the tonnages of total shipments by all movements and for all uses. In comparing the grand total distribution arrived at in the last column with the grand total of the distribution and production from the mines, it is pointed out that the total distribution of total production reported on Forms S.F.A. Nos. 38 and 56 covers shipments to Lake and tidewater as reported by producers and includes coal in transit to and at the dumping piers, that delivered to storage docks, and coal moving inland to storage piles, while the grand total distribution includes shipments made to consumers during the period. During the year ended June 30, 1946 producers reported shipping to the Great Lakes 42,852,391 tons, while dock operators and transshippers moved to consumers total shipments of 45,404,648 tons. To tidewater, producers reported shipments of 40,288,959 and dock operators and transshippers reported moving to consumers 40,922,984. A summarization of waterborne shipments via Lake and tidewater during this year shows there were moved to consumers 3,186,282 tons more than were moved to the dumping piers by producers, hence the difference in totals.

Certain transshippers are delinquent in filing data required, particularly with respect to movements of coal for account of Canadian distributors who themselves arrange for transshipment. The total reported shipments of bituminous coal to Canada during the year ended June 30, 1946 including railroad fuel, was 17,414,919 tons and accounts for 89.8 percent of the grand total shipments to Canada. Reported shipments of railroad fuel to Canada are included in Item 4, "Railroad Fuel."

Detail breakdowns of the Lake and tidewater shipments are shown in Tables 2 and 3.

TABLE 2. - SHIPMENTS OF BITUMINOUS COAL VIA TIDEWATER TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE.

This table provides the distribution of tidewater interport shipments to alongside consumers, by district of origin, State of destination, and use within the State. There are also shown the tonnages of coal moving off the commercial tidewater docks, by State of destination and by use. It is not possible, as a rule, to secure the district of origin on these ex-dock coals, and, therefore, they are shown only in total. The data represent the distribution of coal that moved from the mines via tidewater during the coal year to the State of consumption and by uses.

Following the detailed State analyses are the tonnages that moved for railroad fuel, bunker fuel, and export overseas, by district of origin, for alongside purchasers and total shipments ex-dock.

TABLE 3. - SHIPMENTS OF BITUMINOUS COAL VIA THE GREAT LAKES TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE.

Here is listed the distribution of Great Lakes interport shipments to alongside consumers, by district of origin, State of destination, and use. There are also shown the tonnages of coal moving off the Upper Lakes commercial docks, by State of destination and use. As in the case of shipments from the tidewater docks, it is not possible, as a rule, to secure the district of origin on the ex-dock coals, and, therefore, they are shown in total only. The data represent the distribution of coal that moved from the mines via the Great Lakes during the year ended June 30, 1946 to the State of consumption and by uses.

Following the detailed State analyses and the United States total are the tonnages that move to Canada. The total reported interport movement for storage or consignment is shown for the reason that Canadian dock operators are not required and do not file reports of ex-dock shipments from commercial docks.

To complete the analysis of the total reported shipments, railroad and Lake vessel fuels are shown.

TABLE 4. - SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, USE, CONSOLIDATED SIZE GROUP, AND METHOD OF MOVEMENT, AS REPORTED ON FORMS S.F.A. NOS. 38, 48, AND 56, AND CARGO MANIFESTS, INVOICES, AND SUMMARY REPORTS.

For each producing district there are indicated the total reported shipments and transshipments, by consolidated size groups, methods of movement, and consumer uses. Due to the fact that the district of origin of shipments off the docks on the Upper Lakes and Seaboard are not ascertainable, these tonnages are shown in total only for the Great Lakes and tidewater groups.

The five basic size groups for all movements and uses except the Great Lakes and tidewater ex-dock shipments are identical to those described below as being applicable in Table 6. In the case of Lake and tidewater ex-dock shipments, block, lump, egg, and stove sizes are included in Group 1; nut, pea, and stoker (including all coal shipped from the mine as stoker as well as dock-made stoker sizes) in Group 2; run of pile (including all coal except screenings and stoker which are loaded without rescreening) in Group 3; and screenings (including all resultants from screenings on the docks as well as screenings shipped as such from the mines) in Group 4. With no break reported as to sizes of screenings shipped ex-dock, the total tonnage of all screenings is reported in Group 4.

Consumer uses (other than byproduct and beehive coke oven coal trucked away from the producing mine, and smithing) are not reported for truck shipments or other disposals not specified, and, therefore, are shown only in total for the district. Coal used at the mines and the net changes in inventories are also shown in total in order to complete the analysis of the total tonnage reported by district of origin.

TABLE 5. - RECAPITULATION OF THE DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56, BY DISTRICT OF ORIGIN, METHOD OF MOVEMENT, AND/OR USE.

This table includes the summaries of the tonnages for each producing district by methods of movements and by uses as reported by the producers. The ratio of the coverage of the total for each district as compared with the production for the last six months of 1946 as reported in Table No. 4 of M.M.S. No. 1468 dated November 19,1945 and preliminary for January through June as reported in Weekly Coal Report No. 1517 of August 17, 1946 is also shown at the foot of the table.

TABLE 6. - PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED JUNE 30, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56.

This table shows for each producing district the total tonnages broken down by five basic size groupings as described in the captions of Column 1 through 5 of the table, by truck mines, for railroad fuel and all other movements and uses as reported on Forms S.F.A. Nos. 38 and 56. These basic groups of sizes with the exception of sizes 1 and 2 in District 3 follow the general descriptions of the size groups for District No. 1 as set forth in the minimum and maximum price schedules for that district. In District 3 size group 1 includes "lump coal and double screened coal with a bottom size larger than 2"." Size group 2 includes "lump and double screened coal with a bottom size 2" and smaller." In the case of basic group 3, domestic mine run, and screened and altered mine run, were included as these descriptions are used in other districts. These added grades of coal, however, do not include any sizes outside the descriptions for Size Group 3 in District No. 1. In basic groups 4 and 5, the only changes made from District 1 descriptions were the inclusion in each group of dedusted screenings which appear in the size group descriptions of certain districts.

In consolidating the size groups for all districts under the five basic groups described in the table, it was found that in some districts the maximum top and bottom size of certain size groups overlapped. In some instances, where the preponderant sizes of the size groups which overlapped were known, it was possible to determine the basic group within which most of the tonnage would fall. In certain instances of overlapping size groups where there was more than one such size which overlapped, the size group was included in the basic group on the basis of the maximum top size.

The sizes shown are those as reported on Forms S.F.A. Nos. 38 and 56 and are the sizes as shipped from the mines.

* * * * * * * *

This publication was prepared by Joseph J. Gallagher and Columbus R. Gentile. The editing of reports filed by producers, transshippers and dock operators and the preparation of basic statistical data was directed by Walter T. Kuzara and Florace C. Scalf under the direct supervision of Mark D. Miller. The analysis for the Bureau was made under the general supervision of W. B. Reed, Acting Chief, Economic Analysis Section, and T. W. Hunter, Chief, Coal Economics Division.

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38, 48 AND 56 AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

(In Net Tons of 2,000 Pounds)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. All-Rail, River and Ex-River 1/ (Excluding Railroad Fuel)															
New England															
Connecticut Total	498,958	51,467	218,747	-	-	-	32,344	41,725	-	-	-	-	-	-	-
Industrial	382,208	29,529	155,182	-	-	-	9,422	17,088	-	-	-	-	-	-	-
Retail Yards	113,636	4,830	63,565	-	-	-	18,535	21,123	-	-	-	-	-	-	-
Byproduct and Water Gas	-	17,108	-	-	-	-	4,387	2,966	-	-	-	-	-	-	-
Smithing	3,114	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use Not Reported	-	-	-	-	-	-	-	548	-	-	-	-	-	-	-
Maine Total	34,988	7,053	65,514	-	-	-	65,061	29,894	-	-	-	-	-	-	-
Industrial	14,551	95	42,671	-	-	-	40,037	22,001	-	-	-	-	-	-	-
Retail Yards	19,868	5,697	22,843	-	-	-	25,024	7,360	-	-	-	-	-	-	-
Byproduct and Water Gas	-	1,261	-	-	-	-	-	533	-	-	-	-	-	-	-
Smithing	569	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts Total	1,284,389	97,015	426,419	-	-	240	229,885	235,348	-	-	-	-	-	-	-
Industrial	1,041,275	60,010	266,550	-	-	-	30,758	114,304	-	-	-	-	-	-	-
Retail Yards	239,735	23,557	128,705	-	-	240	194,188	76,177	-	-	-	-	-	-	-
Byproduct and Water Gas	-	13,448	2,930	-	-	-	506	44,867	-	-	-	-	-	-	-
Smithing	3,379	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use Not Reported	-	-	28,234	-	-	-	4,433	-	-	-	-	-	-	-	-
New Hampshire Total	187,169	26,258	77,341	-	-	102	10,956	11,328	-	-	-	-	-	-	-
Industrial	138,193	22,067	38,811	-	-	102	1,172	5,594	-	-	-	-	-	-	-
Retail Yards	48,928	3,248	38,530	-	-	-	9,784	3,329	-	-	-	-	-	-	-
Byproduct and Water Gas	-	943	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use Not Reported	-	-	-	-	-	-	-	2,405	-	-	-	-	-	-	-
Rhode Island Total	28,685	3,647	33,621	-	-	-	30,289	18,909	-	-	-	-	-	-	-
Industrial	24,031	3,523	1,546	-	-	-	17,153	10,449	-	-	-	-	-	-	-
Retail Yards	4,543	124	29,848	-	-	-	7,983	5,212	-	-	-	-	-	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	111	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use Not Reported	-	-	2,227	-	-	-	5,153	3,248	-	-	-	-	-	-	-
Vermont Total	150,231	12,810	85,023	-	-	1,236	2,194	24,835	-	-	-	-	-	-	-
Industrial	115,545	8,215	61,149	-	-	1,236	46	22,143	-	-	-	-	-	-	-
Retail Yards	34,394	988	23,874	-	-	-	2,148	2,692	-	-	-	-	-	-	-
Byproduct and Water Gas	-	3,607	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	292	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38, 48 AND 56 AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

(In Net Tons of 2,000 Pounds)

TABLE 1

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
1. All-Rail, River and Ex-River 1/ (Excluding Railroad Fuel)													
New England													
Connecticut Total	-	-	-	-	-	-	-	-	843,241	-	2,756,465	2,756,465	3,599,706
Industrial	-	-	-	-	-	-	-	-	593,429	-	1,712,565	1,712,565	2,305,994
Retail Yards	-	-	-	-	-	-	-	-	221,689	-	428,870	428,870	650,559
Byproduct and Water Gas	-	-	-	-	-	-	-	-	24,461	-	615,030	615,030	639,491
Smithing	-	-	-	-	-	-	-	-	3,114	-	-	-	3,114
Use Not Reported	-	-	-	-	-	-	-	-	548	-	-	-	548
Maine Total	-	-	-	-	-	-	-	-	202,510	-	1,149,271	1,149,271	1,351,781
Industrial	-	-	-	-	-	-	-	-	119,355	-	806,034	806,034	925,389
Retail Yards	-	-	-	-	-	-	-	-	80,792	-	339,964	339,964	420,756
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,794	-	3,087	3,087	4,881
Smithing	-	-	-	-	-	-	-	-	569	-	186	186	755
Massachusetts Total	-	-	-	-	-	-	-	-	2,273,296	-	6,261,076	6,261,076	8,534,372
Industrial	-	-	-	-	-	-	-	-	1,512,897	-	2,856,917	2,856,917	4,369,814
Retail Yards	-	-	-	-	-	-	-	-	662,602	-	1,753,369	1,753,369	2,415,971
Byproduct and Water Gas	-	-	-	-	-	-	-	-	61,751	-	1,650,790	1,650,790	1,712,541
Smithing	-	-	-	-	-	-	-	-	3,379	-	-	-	3,379
Use Not Reported	-	-	-	-	-	-	-	-	32,667	-	-	-	32,667
New Hampshire Total	-	-	-	-	-	-	-	-	313,154	-	368,239	368,239	681,393
Industrial	-	-	-	-	-	-	-	-	205,939	-	245,182	245,182	451,121
Retail Yards	-	-	-	-	-	-	-	-	103,819	-	121,216	121,216	225,035
Byproduct and Water Gas	-	-	-	-	-	-	-	-	943	-	1,841	1,841	2,784
Smithing	-	-	-	-	-	-	-	-	48	-	-	-	48
Use Not Reported	-	-	-	-	-	-	-	-	2,405	-	-	-	2,405
Rhode Island Total	-	-	-	-	-	-	-	-	115,151	-	1,199,647	1,199,647	1,314,798
Industrial	-	-	-	-	-	-	-	-	56,702	-	280,684	280,684	337,386
Retail Yards	-	-	-	-	-	-	-	-	47,710	-	603,867	603,867	651,577
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	315,096	315,096	315,096
Smithing	-	-	-	-	-	-	-	-	111	-	-	-	111
Use Not Reported	-	-	-	-	-	-	-	-	10,628	-	-	-	10,628
Vermont Total	-	-	-	-	-	-	-	-	276,329	-	27,588	27,588	303,917
Industrial	-	-	-	-	-	-	-	-	208,334	-	27,078	27,078	235,412
Retail Yards	-	-	-	-	-	-	-	-	64,096	-	510	510	64,606
Byproduct and Water Gas	-	-	-	-	-	-	-	-	3,607	-	-	-	3,607
Smithing	-	-	-	-	-	-	-	-	292	-	-	-	292

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Middle Atlantic															
New Jersey Total	2,336,422	384,587	1,399,594	-	-	9,123	138,987	130,920	-	-	-	-	-	-	-
Industrial	2,108,312	332,809	1,146,139	-	-	2,628	59,792	63,419	-	-	-	-	-	-	-
Retail Yards	226,223	33,783	232,069	-	-	6,495	78,182	7,670	-	-	-	-	-	-	-
Byproduct and Water Gas	-	17,995	21,386	-	-	-	1,013	55,598	-	-	-	-	-	-	-
Smithing	1,887	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-	4,233	-	-	-	-	-	-	-
New York Total	5,915,281	3,971,592	3,322,988	202,447	-	152,600	87,284	25,778	-	-	-	-	-	-	-
Industrial	4,524,070	1,680,585	2,135,095	142,469	-	132,563	44,874	15,704	-	-	-	-	-	-	-
Retail Yards	582,253	271,313	402,022	59,978	-	20,037	40,942	4,983	-	-	-	-	-	-	-
Byproduct and Water Gas	804,654	2,019,694	785,871	-	-	-	1,300	5,091	-	-	-	-	-	-	-
Smithing	4,304	-	-	-	-	-	168	-	-	-	-	-	-	-	-
Pennsylvania Total	6,861,983	25,708,113	4,532,495	150,959	-	90,173	284,784	433,694	-	-	-	-	-	-	-
Industrial	4,267,730	6,694,353	2,541,089	95,799	-	56,368	24,169	192,910	-	-	-	-	-	-	-
Retail Yards	393,433	1,414,181	249,050	55,160	-	33,805	72,038	52,483	-	-	-	-	-	-	-
Byproduct and Water Gas 3/	2,187,353	17,599,076	1,742,091	-	-	-	188,384	187,421	-	-	-	-	-	-	-
Smithing	5,667	503	265	-	-	-	193	880	-	-	-	-	-	-	-
Storage	7,800	-	-	-	-	-	-	-	-	-	-	-	-	-	-
East North Central															
Illinois Total	29,212	17,694	42,206	11,588	-	-	4,128,388	2,960,705	1,160,795	22,897,390	3,167,507	-	-	42,968	964
Industrial	6,312	3,802	16,724	5,333	-	-	59,241	186,369	399,570	15,901,382	2,043,777	-	-	1,813	812
Retail Yards	19,082	53	25,482	6,255	-	-	3,171,801	1,676,460	761,225	6,786,607	1,082,970	-	-	40,838	152
Byproduct and Water Gas	-	13,839	-	-	-	-	893,324	1,097,876	-	209,401	40,760	-	-	317	-
Smithing	3,818	-	-	-	-	-	4,022	-	-	-	-	-	-	-	-
Indiana Total	3,110	76,143	51,355	109,402	-	-	2,745,531	6,900,253	367,664	1,962,119	7,037,922	-	1,517	-	-
Industrial	810	4,327	23,955	66,764	-	-	32,065	1,182,936	199,532	1,757,239	5,652,213	-	1,469	-	-
Retail Yards	361	-	27,400	42,638	-	-	798,783	3,110,785	168,132	194,139	1,385,647	-	-	-	-
Byproduct and Water Gas	-	71,776	-	-	-	-	1,913,693	2,606,475	-	10,741	62	-	-	-	-
Smithing	1,939	40	-	-	-	-	990	57	-	-	-	-	48	-	-
Michigan Total	78,303	416,155	217,715	1,189,833	35,187	92	3,058,307	7,728,662	68,099	387,837	94,165	-	-	-	-
Industrial	70,561	333,090	111,832	781,591	15,911	92	71,780	4,318,138	17,681	160,279	52,403	-	-	-	-
Retail Yards	6,553	11,525	105,883	396,608	19,276	-	2,840,953	3,246,022	50,418	227,558	41,762	-	-	-	-
Byproduct and Water Gas	-	71,540	-	11,634	-	-	144,572	164,502	-	-	-	-	-	-	-
Smithing	1,189	-	-	-	-	-	1,002	-	-	-	-	-	-	-	-
Ohio Total	201,219	6,184,158	2,774,280	9,457,392	-	652,628	5,252,213	13,845,572	47,615	563	30,489	-	-	-	-
Industrial	30,973	1,650,272	1,955,196	7,808,612	-	604,535	224,642	5,798,482	32,076	252	22,554	-	-	-	-
Retail Yards	10,503	400,209	699,424	1,648,780	-	48,093	2,297,995	5,101,554	15,539	311	7,935	-	-	-	-
Byproduct and Water Gas	155,142	4,127,629	119,660	-	-	-	2,726,166	2,873,501	-	-	-	-	-	-	-
Smithing	4,601	41	-	-	-	-	3,410	117	-	-	-	-	-	-	-
Storage	-	6,007	-	-	-	-	-	71,918	-	-	-	-	-	-	-

TABLE 1.

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Middle Atlantic													
New Jersey Total	-	-	-	-	-	-	-	-	4,399,633	-	4,165,568	4,165,568	8,565,201
Industrial	-	-	-	-	-	-	-	-	3,713,099	-	2,643,871	2,643,871	6,356,970
Retail Yards	-	-	-	-	-	-	-	-	584,422	-	650	650	585,072
Byproduct and Water Gas	-	-	-	-	-	-	-	-	95,992	-	1,521,047	1,521,047	1,617,039
Smithing	-	-	-	-	-	-	-	-	1,887	-	-	-	1,887
Storage	-	-	-	-	-	-	-	-	4,233	-	-	-	4,233
New York Total	-	-	-	-	-	-	-	-	13,677,970	2,412,028	8,743,266	11,155,294	24,833,264
Industrial	-	-	-	-	-	-	-	-	8,675,360	752,574	6,227,490	6,980,064	15,655,424
Retail Yards	-	-	-	-	-	-	-	-	1,381,528	32,813	1,030,137	1,062,950	2,444,478
Byproduct and Water Gas	-	-	-	-	-	-	-	-	3,616,610	1,626,641	1,485,639	3,112,280	6,728,890
Smithing	-	-	-	-	-	-	-	-	4,472	-	-	-	4,472
Pennsylvania Total	-	-	-	-	-	-	-	-	38,062,201	191,198	2,133,885	2,325,083	40,387,284
Industrial	-	-	-	-	-	-	-	-	13,872,418	-	1,599,591	1,599,591	15,472,009
Retail Yards	-	-	-	-	-	-	-	-	2,270,150	-	-	-	2,270,150
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	21,904,325	191,198	534,294	725,492	22,629,817
Smithing	-	-	-	-	-	-	-	-	7,508	-	-	-	7,508
Storage	-	-	-	-	-	-	-	-	7,800	-	-	-	7,800
East North Central													
Illinois Total	-	-	-	-	-	-	-	-	34,459,417	1,528,108	-	1,528,108	35,987,525
Industrial	-	-	-	-	-	-	-	-	18,625,135	47,745	-	47,745	18,672,880
Retail Yards	-	-	-	-	-	-	-	-	13,570,925	105,734	-	105,734	13,676,659
Byproduct and Water Gas	-	-	-	-	-	-	-	-	2,255,517	1,374,629	-	1,374,629	3,630,146
Smithing	-	-	-	-	-	-	-	-	7,840	-	-	-	7,840
Indiana Total	-	-	-	-	-	-	-	-	19,255,016	3,137,923	-	3,137,923	22,392,939
Industrial	-	-	-	-	-	-	-	-	8,921,310	-	-	-	8,921,310
Retail Yards	-	-	-	-	-	-	-	-	5,727,885	-	-	-	5,727,885
Byproduct and Water Gas	-	-	-	-	-	-	-	-	4,602,747	3,137,923	-	3,137,923	7,740,670
Smithing	-	-	-	-	-	-	-	-	3,074	-	-	-	3,074
Michigan Total	-	-	-	-	-	-	-	-	13,274,355	10,073,956	-	10,073,956	23,348,311
Industrial	-	-	-	-	-	-	-	-	5,933,358	6,282,254	-	6,282,254	12,215,612
Retail Yards	-	-	-	-	-	-	-	-	6,946,558	1,126,137	-	1,126,137	8,072,695
Byproduct and Water Gas	-	-	-	-	-	-	-	-	392,248	2,663,864	-	2,663,864	3,056,112
Smithing	-	-	-	-	-	-	-	-	2,191	1,701	-	1,701	3,892
Ohio Total	-	-	-	-	-	-	-	-	38,446,129	349,354	-	349,354	38,795,483
Industrial	-	-	-	-	-	-	-	-	18,127,594	-	-	-	18,127,594
Retail Yards	-	-	-	-	-	-	-	-	10,230,343	758	-	758	10,231,101
Byproduct and Water Gas	-	-	-	-	-	-	-	-	10,002,098	348,596	-	348,596	10,350,694
Smithing	-	-	-	-	-	-	-	-	8,169	-	-	-	8,169
Storage	-	-	-	-	-	-	-	-	77,925	-	-	-	77,925

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wisconsin Total	1,588	2,111	10,089	6,819	-	-	515,013	185,792	254,076	1,875,635	779,773	-	-	-	-
Industrial	55	2,111	2,729	4,508	-	-	5,207	9,772	194,024	1,344,816	683,983	-	-	-	-
Retail Yards	-	-	7,360	2,311	-	-	509,452	165,570	60,052	530,819	61,721	-	-	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	10,450	-	-	34,069	-	-	-	-
Smithing	1,533	-	-	-	-	-	354	-	-	-	-	-	-	-	-
West North Central															
Iowa Total	1,643	-	9,805	1,410	-	-	47,088	641,345	283,232	3,913,942	586,620	656,260	-	109,994	322,772
Industrial	-	-	381	-	-	-	596	1,156	52,034	1,768,897	317,598	533,641	-	24,610	99,656
Retail Yards	-	-	9,424	1,410	-	-	44,276	598,223	231,198	2,144,412	269,022	122,619	-	85,384	223,116
Byproduct and Water Gas	-	-	-	-	-	-	1,726	41,966	-	633	-	-	-	-	-
Smithing	1,643	-	-	-	-	-	490	-	-	-	-	-	-	-	-
Kansas Total	1,293	-	-	-	-	-	46	-	-	49,526	439	50	90	145,110	1,173,951
Industrial	-	-	-	-	-	-	-	-	-	5,386	439	-	-	30,110	644,091
Retail Yards	-	-	-	-	-	-	-	-	-	44,140	-	50	-	115,000	529,860
Smithing	1,293	-	-	-	-	-	46	-	-	-	-	-	90	-	-
Minnesota Total	5,270	-	1,730	850	-	-	77,388	48,955	88,916	1,060,658	131,446	231	-	51,683	4,447
Industrial	-	-	-	-	-	-	260	3,186	45,444	744,481	115,941	84	-	7,861	2,829
Retail Yards	-	-	1,730	850	-	-	77,048	45,769	43,472	316,177	15,505	147	-	43,822	1,618
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	5,270	-	-	-	-	-	80	-	-	-	-	-	-	-	-
Missouri Total	20,850	-	946	-	-	-	345,961	318,213	63,253	3,458,177	5,756	6,220	2,711	510,733	2,033,961
Industrial	2,185	-	946	-	-	-	487	17,826	56,022	1,573,359	2,501	-	382	19,262	1,057,755
Retail Yards	12,998	-	-	-	-	-	237,338	97,750	7,231	1,884,818	3,255	6,220	1,440	491,471	976,206
Byproduct and Water Gas	-	-	-	-	-	-	108,091	202,637	-	-	-	-	-	-	-
Smithing	5,667	-	-	-	-	-	45	-	-	-	-	-	889	-	-
Nebraska Total	1,384	-	-	-	-	-	733	1,999	11,572	156,056	6,842	-	-	168,958	780,262
Industrial	-	-	-	-	-	-	-	-	4,752	25,009	-	-	-	1,512	424,551
Retail Yards	-	-	-	-	-	-	733	1,999	6,820	131,047	6,842	-	-	167,446	355,711
Smithing	1,384	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Dakota Total	740	-	-	-	-	-	-	-	383	492	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	71	53	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	312	439	-	-	-	-	-
Smithing	740	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Dakota Total	894	-	-	-	-	-	5,517	3,087	15,244	112,442	2,740	-	-	25,482	13,803
Industrial	-	-	-	-	-	-	-	100	10,082	67,044	2,619	-	-	216	6,406
Retail Yards	-	-	-	-	-	-	5,517	1,438	5,162	45,398	121	-	-	25,266	7,397
Byproduct and Water Gas	-	-	-	-	-	-	-	1,549	-	-	-	-	-	-	-
Smithing	894	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Wisconsin Total	-	-	-	-	-	-	-	-	3,630,896	7,942,498	-	7,942,498	11,573,394
Industrial	-	-	-	-	-	-	-	-	2,247,205	3,055,574	-	3,055,574	5,302,779
Retail Yards	-	-	-	-	-	-	-	-	1,337,285	3,358,501	-	3,358,501	4,695,786
Byproduct and Water Gas	-	-	-	-	-	-	-	-	44,519	1,528,065	-	1,528,065	1,572,584
Smithing	-	-	-	-	-	-	-	-	1,887	358	-	358	2,245
West North Central													
Iowa Total	244	20,622	-	24,601	1,148	-	474	-	6,621,200	79,711	-	79,711	6,700,911
Industrial	-	-	-	-	-	-	-	-	2,798,569	966	-	966	2,799,535
Retail Yards	244	20,622	-	24,601	1,148	-	474	-	3,776,173	78,738	-	78,738	3,854,911
Byproduct and Water Gas	-	-	-	-	-	-	-	-	44,325	-	-	-	44,325
Smithing	-	-	-	-	-	-	-	-	2,133	7	-	7	2,140
Kansas Total	1,208	169,904	-	15,323	7,008	-	-	-	1,563,948	-	-	-	1,563,948
Industrial	-	403	-	3,040	83	-	-	-	683,552	-	-	-	683,552
Retail Yards	1,208	169,453	-	12,283	6,925	-	-	-	878,919	-	-	-	878,919
Smithing	-	48	-	-	-	-	-	-	1,477	-	-	-	1,477
Minnesota Total	-	918	-	8,270	-	150,513	9,739	-	1,641,014	3,579,911	-	3,579,911	5,220,925
Industrial	-	-	-	5,009	-	94,931	-	-	1,020,026	1,251,539	-	1,251,539	2,271,565
Retail Yards	-	918	-	3,261	-	55,582	9,739	-	615,638	1,895,221	-	1,895,221	2,510,859
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	431,635	-	431,635	431,635
Smithing	-	-	-	-	-	-	-	-	5,350	1,516	-	1,516	6,866
Missouri Total	-	204	-	3,264	-	-	-	-	6,770,249	-	-	-	6,770,249
Industrial	-	-	-	-	-	-	-	-	2,730,725	-	-	-	2,730,725
Retail Yards	-	204	-	3,264	-	-	-	-	3,722,195	-	-	-	3,722,195
Byproduct and Water Gas	-	-	-	-	-	-	-	-	310,728	-	-	-	310,728
Smithing	-	-	-	-	-	-	-	-	6,601	-	-	-	6,601
Nebraska Total	4,346	433,476	-	263,423	28,697	-	-	-	1,857,748	7,431	-	7,431	1,865,179
Industrial	89	10,181	-	134,357	508	-	-	-	600,959	-	-	-	600,959
Retail Yards	4,257	423,295	-	129,066	28,189	-	-	-	1,255,405	7,431	-	7,431	1,262,836
Smithing	-	-	-	-	-	-	-	-	1,384	-	-	-	1,384
North Dakota Total	-	79	-	61,599	-	1,649,694	32,661	-	1,745,648	190,985	-	190,985	1,936,633
Industrial	-	-	-	17,913	-	799,259	207	-	817,503	37,624	-	37,624	855,127
Retail Yards	-	79	-	43,686	-	850,435	32,454	-	927,405	153,245	-	153,245	1,080,650
Smithing	-	-	-	-	-	-	-	-	740	116	-	116	856
South Dakota Total	87	52,819	-	159,325	11,139	128,991	64,916	-	596,486	303,502	-	303,502	899,988
Industrial	-	1,595	-	111,927	-	104,148	25,857	-	329,994	13,667	-	13,667	343,661
Retail Yards	87	51,224	-	47,398	11,139	24,843	39,059	-	264,049	289,770	-	289,770	553,819
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,549	-	-	-	1,549
Smithing	-	-	-	-	-	-	-	-	894	65	-	65	959

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
South Atlantic															
Delaware Total	189,775	28,947	100,537	-	-	239	10,486	3,412	-	-	-	-	-	-	-
Industrial	170,548	26,842	84,869	-	-	239	8,708	3,360	-	-	-	-	-	-	-
Retail Yards	19,227	786	15,668	-	-	-	1,778	52	-	-	-	-	-	-	-
Byproduct and Water Gas	-	1,319	-	-	-	-	-	-	-	-	-	-	-	-	-
District of Columbia Total	248,603	4,711	38,829	-	-	289	1,376,886	29,690	-	-	-	-	-	-	-
Industrial	233,460	4,512	20,937	-	-	289	931,546	10,548	-	-	-	-	-	-	-
Retail Yards	15,143	199	17,892	-	-	-	445,340	12,354	-	-	-	-	-	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	6,788	-	-	-	-	-	-	-
Florida Total	-	-	-	-	-	-	2,628	120,516	297,785	289	-	-	141,764	-	-
Industrial	-	-	-	-	-	-	46	53,575	202,277	289	-	-	118,466	-	-
Retail Yards	-	-	-	-	-	-	2,220	47,239	95,508	-	-	-	22,630	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	19,702	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	362	-	-	-	-	-	668	-	-
Georgia Total	-	-	-	-	-	48	5,652	2,201,004	39,539	-	-	-	315,028	-	-
Industrial	-	-	-	-	-	48	4,766	1,060,692	6,463	-	-	-	218,072	-	-
Retail Yards	-	-	-	-	-	-	722	1,123,672	33,076	-	-	-	94,866	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	16,640	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	164	-	-	-	-	-	2,090	-	-
Maryland Total	1,238,904	110,475	2,456,234	-	-	16,687	404,398	83,637	-	-	-	-	-	-	-
Industrial	1,040,653	67,766	896,694	-	-	7,497	129,823	72,939	-	-	-	-	-	-	-
Retail Yards	192,076	17,564	226,695	-	-	9,190	195,393	10,297	-	-	-	-	-	-	-
Byproduct and Water Gas	5,455	25,145	1,332,845	-	-	-	79,130	401	-	-	-	-	-	-	-
Smithing	720	-	-	-	-	-	52	-	-	-	-	-	-	-	-
North Carolina Total	-	-	265	-	-	-	1,326,989	4,165,738	1,838	-	-	-	25,675	-	-
Industrial	-	-	105	-	-	-	984,608	2,412,930	1,574	-	-	-	25,493	-	-
Retail Yards	-	-	160	-	-	-	341,186	1,653,534	264	-	-	-	182	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	99,274	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	1,195	-	-	-	-	-	-	-	-
South Carolina Total	-	-	-	-	-	-	265,983	2,024,140	361	-	-	-	89,749	-	-
Industrial	-	-	-	-	-	-	255,666	1,226,110	361	-	-	-	80,333	-	-
Retail Yards	-	-	-	-	-	-	10,021	752,839	-	-	-	-	9,416	-	-
Byproduct and Water Gas	-	-	-	-	-	-	-	45,191	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	296	-	-	-	-	-	-	-	-
Virginia Total	28,322	4,177	68,094	307	-	2,950	4,813,644	2,709,371	104,487	-	-	-	1,315	-	-
Industrial	23,242	3,056	61,682	307	-	2,950	3,487,181	1,645,518	83,530	-	-	-	1,315	-	-
Retail Yards	5,080	1,121	6,412	-	-	-	1,322,610	713,455	20,957	-	-	-	-	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	3,110	350,398	-	-	-	-	-	-	-
Smithing	-	-	-	-	-	-	743	-	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
South Atlantic													
Delaware Total	-	-	-	-	-	-	-	-	333,396	-	77	77	333,473
Industrial	-	-	-	-	-	-	-	-	294,566	-	77	77	294,643
Retail Yards	-	-	-	-	-	-	-	-	37,511	-	-	-	37,511
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,319	-	-	-	1,319
District of Columbia Total	-	-	-	-	-	-	-	-	1,699,008	-	-	-	1,699,008
Industrial	-	-	-	-	-	-	-	-	1,201,292	-	-	-	1,201,292
Retail Yards	-	-	-	-	-	-	-	-	490,928	-	-	-	490,928
Byproduct and Water Gas	-	-	-	-	-	-	-	-	6,788	-	-	-	6,788
Florida Total	-	-	-	-	-	-	-	-	562,982	-	-	-	562,982
Industrial	-	-	-	-	-	-	-	-	374,653	-	-	-	374,653
Retail Yards	-	-	-	-	-	-	-	-	167,597	-	-	-	167,597
Byproduct and Water Gas	-	-	-	-	-	-	-	-	19,702	-	-	-	19,702
Smithing	-	-	-	-	-	-	-	-	1,030	-	-	-	1,030
Georgia Total	-	-	-	-	-	-	-	-	2,561,271	-	-	-	2,561,271
Industrial	-	-	-	-	-	-	-	-	1,290,041	-	-	-	1,290,041
Retail Yards	-	-	-	-	-	-	-	-	1,252,336	-	-	-	1,252,336
Byproduct and Water Gas	-	-	-	-	-	-	-	-	16,640	-	-	-	16,640
Smithing	-	-	-	-	-	-	-	-	2,254	-	-	-	2,254
Maryland Total	-	-	-	-	-	-	-	-	4,310,335	-	972,861	972,861	5,283,196
Industrial	-	-	-	-	-	-	-	-	2,215,372	-	847,933	847,933	3,063,305
Retail Yards	-	-	-	-	-	-	-	-	651,215	-	-	-	651,215
Byproduct and Water Gas	-	-	-	-	-	-	-	-	1,442,976	-	124,928	124,928	1,567,904
Smithing	-	-	-	-	-	-	-	-	772	-	-	-	772
North Carolina Total	-	-	-	-	-	-	-	-	5,520,505	-	-	-	5,520,505
Industrial	-	-	-	-	-	-	-	-	3,424,710	-	-	-	3,424,710
Retail Yards	-	-	-	-	-	-	-	-	1,995,326	-	-	-	1,995,326
Byproduct and Water Gas	-	-	-	-	-	-	-	-	99,274	-	-	-	99,274
Smithing	-	-	-	-	-	-	-	-	1,195	-	-	-	1,195
South Carolina Total	-	-	-	-	-	-	-	-	2,380,233	-	-	-	2,380,233
Industrial	-	-	-	-	-	-	-	-	1,562,470	-	-	-	1,562,470
Retail Yards	-	-	-	-	-	-	-	-	772,276	-	-	-	772,276
Byproduct and Water Gas	-	-	-	-	-	-	-	-	45,191	-	-	-	45,191
Smithing	-	-	-	-	-	-	-	-	296	-	-	-	296
Virginia Total	-	-	-	-	-	-	-	-	7,732,667	-	27,188	27,188	7,759,855
Industrial	-	-	-	-	-	-	-	-	5,308,781	-	26,916	26,916	5,335,697
Retail Yards	-	-	-	-	-	-	-	-	2,069,635	-	272	272	2,069,907
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	353,508	-	-	-	353,508
Smithing	-	-	-	-	-	-	-	-	743	-	-	-	743

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
West Virginia Total	162,521	2,156,188	1,151,082	47,010	-	268,364	318,337	3,624,790	-	-	-	-	-	-	-
Industrial	31,315	277,574	647,621	42,615	-	268,310	88,532	2,847,805	-	-	-	-	-	-	-
Retail Yards	5,619	-	56,368	4,395	-	54	101,627	38,186	-	-	-	-	-	-	-
Byproduct and Water Gas 3/	125,009	1,878,614	447,093	-	-	-	127,527	738,799	-	-	-	-	-	-	-
Smithing	578	-	-	-	-	-	651	-	-	-	-	-	-	-	-
East South Central															
Alabama Total	-	-	-	-	-	-	147,022	88,496	216,460	18,376	-	-	8,764,570	-	-
Industrial	-	-	-	-	-	-	25,306	17,507	160,018	3,563	-	-	1,524,666	-	-
Retail Yards	-	-	-	-	-	-	443	70,989	56,442	14,813	-	-	739,808	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	121,273	-	-	-	-	-	6,497,301	-	-
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	2,795	-	-
Kentucky Total	45	2,429	-	8,825	-	-	216,863	2,764,075	1,678,174	821	12,543	-	437	-	-
Industrial	-	2,429	-	8,775	-	-	1,297	766,610	1,137,636	-	11,681	-	-	-	-
Retail Yards	-	-	-	50	-	-	55,091	1,235,179	540,538	821	862	-	369	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	160,177	762,286	-	-	-	-	-	-	-
Smithing	45	-	-	-	-	-	298	-	-	-	-	-	68	-	-
Mississippi Total	-	-	-	-	-	-	-	1,984	348,389	31,609	-	-	159,283	-	-
Industrial	-	-	-	-	-	-	-	-	195,854	10,619	-	-	47,116	-	-
Retail Yards	-	-	-	-	-	-	-	1,984	152,535	20,990	-	-	109,627	-	-
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	2,540	-	-
Tennessee Total	-	1,391	1,870	-	-	-	28,922	3,387,391	2,158,000	80,860	-	-	531,226	47	43
Industrial	-	1,391	1,870	-	-	-	13,854	2,063,391	1,003,740	6,161	-	-	223,693	-	-
Retail Yards	-	-	-	-	-	-	1,215	1,190,791	1,154,260	74,699	-	-	145,700	47	43
Byproduct and Water Gas 3/	-	-	-	-	-	-	13,798	133,209	-	-	-	-	159,424	-	-
Smithing	-	-	-	-	-	-	55	-	-	-	-	-	2.404		
West South Central															
Arkansas Total	84	-	-	-	-	-	-	2,423	119,238	122,364	-	-	28,352	97,730	6,363
Industrial	-	-	-	-	-	-	-	-	65,245	26,294	-	-	7,343	41,325	2,517
Retail Yards	-	-	-	-	-	-	-	2,423	53,993	96,070	-	-	19,196	56,405	3,846
Smithing	84	-	-	-	-	-	-	-	-	-	-	-	1,813	-	-
Louisiana Total	60	-	-	-	-	-	-	-	43,675	10,877	-	-	62,596	693	4,719
Industrial	-	-	-	-	-	-	-	-	28,212	5,144	-	-	28,297	-	390
Retail Yards	-	-	-	-	-	-	-	-	15,463	5,733	-	-	30,640	693	4,329
Smithing	60	-	-	-	-	-	-	-	-	-	-	-	3,659	-	-
Oklahoma Total	152	-	-	-	-	-	-	-	-	-	-	-	101	79,949	420,613
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	78,713	268,449
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	1,236	152,164
Smithing	152	-	-	-	-	-	-	-	-	-	-	-	101	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
West Virginia Total	-	-	-	-	-	-	-	-	7,728,292	-	-	-	7,728,292
Industrial	-	-	-	-	-	-	-	-	4,203,772	-	-	-	4,203,772
Retail Yards	-	-	-	-	-	-	-	-	206,249	-	-	-	206,249
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	3,317,042	-	-	-	3,317,042
Smithing	-	-	-	-	-	-	-	-	1,229	-	-	-	1,229
East South Central													
Alabama Total	-	-	-	-	-	-	-	-	9,234,924	-	-	-	9,234,924
Industrial	-	-	-	-	-	-	-	-	1,731,060	-	-	-	1,731,060
Retail Yards	-	-	-	-	-	-	-	-	882,495	-	-	-	882,495
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	6,618,574	-	-	-	6,618,574
Smithing	-	-	-	-	-	-	-	-	2,795	-	-	-	2,795
Kentucky Total	-	-	-	-	-	-	-	-	4,684,212	-	-	-	4,684,212
Industrial	-	-	-	-	-	-	-	-	1,928,428	-	-	-	1,928,428
Retail Yards	-	-	-	-	-	-	-	-	1,832,910	-	-	-	1,832,910
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	922,463	-	-	-	922,463
Smithing	-	-	-	-	-	-	-	-	411	-	-	-	411
Mississippi Total	-	-	-	-	-	-	-	-	541,265	-	-	-	541,265
Industrial	-	-	-	-	-	-	-	-	253,589	-	-	-	253,589
Retail Yards	-	-	-	-	-	-	-	-	285,136	-	-	-	285,136
Smithing	-	-	-	-	-	-	-	-	2,540	-	-	-	2,540
Tennessee Total	-	-	-	-	-	-	-	-	6,189,750	-	-	-	6,189,750
Industrial	-	-	-	-	-	-	-	-	3,314,105	-	-	-	3,314,105
Retail Yards	-	-	-	-	-	-	-	-	2,566,755	-	-	-	2,566,755
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	306,431	-	-	-	306,431
Smithing	-	-	-	-	-	-	-	-	2,459	-	-	-	2,459
West South Central													
Arkansas Total	-	-	-	-	-	-	-	-	376,554	-	-	-	376,554
Industrial	-	-	-	-	-	-	-	-	142,724	-	-	-	142,724
Retail Yards	-	-	-	-	-	-	-	-	231,933	-	-	-	231,933
Smithing	-	-	-	-	-	-	-	-	1,897	-	-	-	1,897
Louisiana Total	-	-	-	-	-	-	-	-	122,620	-	-	-	122,620
Industrial	-	-	-	-	-	-	-	-	62,043	-	-	-	62,043
Retail Yards	-	-	-	-	-	-	-	-	56,858	-	-	-	56,858
Smithing	-	-	-	-	-	-	-	-	3,719	-	-	-	3,719
Oklahoma Total	-	10,436	-	-	-	-	-	-	511,251	-	-	-	511,251
Industrial	-	-	-	-	-	-	-	-	347,162	-	-	-	347,162
Retail Yards	-	10,436	-	-	-	-	-	-	163,836	-	-	-	163,836
Smithing	-	-	-	-	-	-	-	-	253	-	-	-	253

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Texas Total	760	-	-	-	-	-	129	-	50	-	-	-	5,298	35,239	272,462
Industrial	-	-	-	-	-	-	-	-	50	-	-	-	48	21,017	121,038
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	330	1,625	128,696
Byproduct and Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	12,597	22,728
Smithing	760	-	-	-	-	-	129	-	-	-	-	-	4,920	-	-
Mountain															
Arizona Total	126	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	126	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado Total	919	-	-	-	-	-	-	-	-	-	-	-	-	25,749	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	10,818	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	1,994	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	-	-	-	-	-	12,937	-
Smithing	919	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idaho Total	146	-	-	-	-	-	315	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	226	-	-	-	-	-	-	-	-
Smithing	146	-	-	-	-	-	89	-	-	-	-	-	-	-	-
Montana Total	369	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	369	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nevada Total	584	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	584	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Mexico Total	88	-	-	-	-	-	-	-	-	-	-	-	-	-	27
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27
Smithing	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utah Total	177	-	-	-	-	-	-	-	-	-	-	-	-	57	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Byproduct and Water Gas 3/	-	-	-	-	-	-	-	-	-	-	-	-	-	57	-
Smithing	177	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wyoming Total	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail Yards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Smithing	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Texas Total	-	27,594	4,362	-	-	-	-	-	345,894	-	-	-	345,894
Industrial	-	5,869	44	-	-	-	-	-	148,066	-	-	-	148,066
Retail Yards	-	21,630	4,318	-	-	-	-	-	156,599	-	-	-	156,599
Byproduct and Water Gas	-	-	-	-	-	-	-	-	35,325	-	-	-	35,325
Smithing	-	95	-	-	-	-	-	-	5,904	-	-	-	5,904
Mountain													
Arizona Total	-	7,414	41,196	-	-	-	-	-	48,736	-	-	-	48,736
Industrial	-	3,755	15,366	-	-	-	-	-	19,121	-	-	-	19,121
Retail Yards	-	3,609	25,830	-	-	-	-	-	29,439	-	-	-	29,439
Smithing	-	50	-	-	-	-	-	-	176	-	-	-	176
Colorado Total	1,202,829	1,811,271	-	49,757	28,907	-	-	-	3,119,432	-	-	-	3,119,432
Industrial	645,918	244,164	-	44,320	52	-	-	-	945,272	-	-	-	945,272
Retail Yards	556,911	558,809	-	5,437	28,855	-	-	-	1,152,006	-	-	-	1,152,006
Byproduct and Water Gas 3/	-	1,007,970	-	-	-	-	-	-	1,020,907	-	-	-	1,020,907
Smithing	-	328	-	-	-	-	-	-	1,247	-	-	-	1,247
Idaho Total	-	5,574	-	169,086	793,503	-	13,001	1,199	982,824	-	-	-	982,824
Industrial	-	575	-	95,633	118,716	-	8,053	1,199	224,176	-	-	-	224,176
Retail Yards	-	4,999	-	73,453	674,787	-	4,948	-	758,413	-	-	-	758,413
Smithing	-	-	-	-	-	-	-	-	235	-	-	-	235
Montana Total	-	371	-	163,904	27,354	2,773	306,325	-	501,096	-	-	-	501,096
Industrial	-	-	-	73,941	862	131	121,759	-	196,693	-	-	-	196,693
Retail Yards	-	371	-	89,963	26,492	2,642	184,566	-	304,034	-	-	-	304,034
Smithing	-	-	-	-	-	-	-	-	369	-	-	-	369
Nevada Total	-	105	-	2,249	204,630	-	-	-	207,568	-	-	-	207,568
Industrial	-	-	-	2,249	140,441	-	-	-	142,690	-	-	-	142,690
Retail Yards	-	105	-	-	64,189	-	-	-	64,294	-	-	-	64,294
Smithing	-	-	-	-	-	-	-	-	584	-	-	-	584
New Mexico Total	-	134,005	32,679	-	-	-	-	-	166,799	-	-	-	166,799
Industrial	-	52,734	2,546	-	-	-	-	-	55,280	-	-	-	55,280
Retail Yards	-	80,914	30,133	-	-	-	-	-	111,074	-	-	-	111,074
Smithing	-	357	-	-	-	-	-	-	445	-	-	-	445
Utah Total	-	1,519	-	37,757	1,815,831	-	-	-	1,855,341	-	-	-	1,855,341
Industrial	-	183	-	37,136	404,036	-	-	-	441,355	-	-	-	441,355
Retail Yards	-	1,336	-	621	659,216	-	-	-	661,173	-	-	-	661,173
Byproduct and Water Gas 3/	-	-	-	-	752,579	-	-	-	752,636	-	-	-	752,636
Smithing	-	-	-	-	-	-	-	-	177	-	-	-	177
Wyoming Total	10,182	36,121	-	306,388	-	-	642	-	353,376	-	-	-	353,376
Industrial	7,230	15,782	-	169,953	-	-	202	-	193,167	-	-	-	193,167
Retail Yards	2,952	20,339	-	136,435	-	-	440	-	160,166	-	-	-	160,166
Smithing	-	-	-	-	-	-	-	-	43	-	-	-	43

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Pacific															
California Total	1,724	–	–	–	–	–	93	–	–	–	–	–	44	35,349	–
Industrial	–	–	–	–	–	–	–	–	–	–	–	–	–	28,918	–
Retail Yards	–	–	–	–	–	–	–	–	–	–	–	–	–	152	–
Byproduct and Water Gas	–	–	–	–	–	–	–	–	–	–	–	–	–	6,279	–
Smithing	1,724	–	–	–	–	–	93	–	–	–	–	–	44	–	–
Oregon Total	615	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Industrial	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Retail Yards	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Smithing	615	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Washington and Alaska Total	944	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Industrial	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Retail Yards	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Byproduct and Water Gas	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Smithing	944	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Storage	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Unknown State Total	16,100	42,780	2,210	7,374	–	–	2,713	42,846	24,714	529	16,218	190	918	1,737	5,081
Industrial	9,004	42,780	2,210	7,374	–	–	2,657	35,609	10,269	529	16,218	–	918	751	1,253
Retail Yards	7,043	–	–	–	–	–	56	7,237	14,445	–	–	190	–	986	3,828
Smithing	53	–	–	–	–	–	–	–	–	–	–	–	–	–	–
United States Total	19,534,673	39,309,901	17,088,989	11,194,216	35,187	1,194,771	25,979,029	54,836,527	7,393,559	36,140,562	11,872,460	662,951	10,130,674	1,331,478	5,039,468
Industrial	14,235,033	11,251,138	10,215,983	8,964,147	15,911	1,076,857	6,555,691	24,198,171	3,906,517	23,400,796	8,921,927	533,725	2,277,616	266,926	2,629,747
Retail Yards	1,956,698	2,189,178	2,390,404	2,218,435	19,276	117,914	12,910,648	21,086,830	3,487,042	12,518,991	2,875,642	129,226	1,174,204	1,032,365	2,386,993
Byproduct and Water Gas 3/	3,277,613	25,862,994	4,451,876	11,634	–	–	6,488,177	9,468,120	–	220,775	74,891	–	6,656,725	32,187	22,728
Smithing	57,529	584	265	–	–	–	14,927	1,054	–	–	–	–	22,129	–	–
Storage	7,800	6,007	–	–	–	–	–	76,151	–	–	–	–	–	–	–
Use Not Reported	–	–	30,461	–	–	–	9,586	6,201	–	–	–	–	–	–	–
Canada Total 4/	324,142	577,726	753,876	28,753	–	1,611	224,630	454,707	7,824	–	–	–	–	–	–
Industrial	252,880	305,238	559,651	10,655	–	1,076	21,370	207,902	7,674	–	–	–	–	–	–
Retail Yards	53,741	36,454	194,225	18,098	–	535	183,833	227,949	150	–	–	–	–	–	–
Byproduct and Water Gas	–	236,034	–	–	–	–	16,698	18,856	–	–	–	–	–	–	–
Smithing	17,521	–	–	–	–	–	2,729	–	–	–	–	–	–	–	–
Storage or Consignment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Use Not Reported	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
U. S. and Canada Total	19,858,815	39,887,627	17,842,865	11,222,969	35,187	1,196,382	26,203,659	55,291,234	7,401,383	36,140,562	11,872,460	662,951	10,130,674	1,331,478	5,039,468
Industrial	14,487,913	11,556,376	10,775,634	8,974,802	15,911	1,077,933	6,577,061	24,406,073	3,914,191	23,400,796	8,921,927	533,725	2,277,616	266,926	2,629,747
Retail Yards	2,010,439	2,225,632	2,584,629	2,236,533	19,276	118,449	13,094,481	21,314,779	3,487,192	12,518,991	2,875,642	129,226	1,174,204	1,032,365	2,386,993
Byproduct and Water Gas 3/	3,277,613	26,099,028	4,451,876	11,634	–	–	6,504,875	9,486,976	–	220,775	74,891	–	6,656,725	32,187	22,728
Storage or Consignment	7,800	6,007	–	–	–	–	–	76,151	–	–	–	–	–	–	–
Smithing	75,050	584	265	–	–	–	17,656	1,054	–	–	–	–	22,129	–	–
Use Not Reported	–	–	30,461	–	–	–	9,586	6,201	–	–	–	–	–	–	–

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
Pacific													
California Total	-	5,969	4,617	27,551	495,829	-	-	-	571,176	-	-	-	571,176
Industrial	-	860	454	16,123	88,232	-	-	-	134,587	-	-	-	134,587
Retail Yards	-	5,109	4,163	11,428	90,321	-	-	-	111,173	-	-	-	111,173
Byproduct and Water Gas	-	-	-	-	317,276	-	-	-	323,555	-	-	-	323,555
Smithing	-	-	-	-	-	-	-	-	1,861	-	-	-	1,861
Oregon Total	-	6,954	-	115,277	249,137	-	196	4,698	376,877	-	-	-	376,877
Industrial	-	-	-	77,274	53,426	-	-	4,618	135,318	-	-	-	135,318
Retail Yards	-	6,954	-	38,003	195,711	-	196	80	240,944	-	-	-	240,944
Smithing	-	-	-	-	-	-	-	-	615	-	-	-	615
Washington and Alaska Total	-	28,566	-	655,329	720,367	-	188,151	409,330	2,002,687	-	2,643	2,643	2,005,330
Industrial	-	227	-	406,975	111,998	-	85,219	297,901	902,320	-	2,643	2,643	904,963
Retail Yards	-	28,339	-	248,354	608,369	-	102,932	83,101	1,071,095	-	-	-	1,071,095
Byproduct and Water Gas	-	-	-	-	-	-	-	20,600	20,600	-	-	-	20,600
Smithing	-	-	-	-	-	-	-	-	944	-	-	-	944
Storage	-	-	-	-	-	-	-	7,728	7,728	-	-	-	7,728
Unknown State Total	1,370	47	-	-	-	-	531	-	165,358	-	6,837	6,837	172,195
Industrial	-	47	-	-	-	-	531	-	130,150	-	1,789	1,789	131,939
Retail Yards	1,370	-	-	-	-	-	-	-	35,155	-	5,048	5,048	40,203
Smithing	-	-	-	-	-	-	-	-	53	-	-	-	53
United States Total	1,220,266	2,753,968	82,854	2,063,103	4,383,550	1,931,971	616,636	415,227	255,212,020	29,796,605	27,814,611	57,611,216	312,823,236
Industrial	653,237	336,375	18,410	1,195,850	918,354	998,469	241,828	303,718	123,116,426	11,441,943	17,278,770	28,720,713	151,837,139
Retail Yards	567,029	1,408,745	64,444	867,253	2,395,341	933,502	374,808	83,181	73,188,149	7,048,348	4,283,903	11,332,251	84,520,400
Byproduct and Water Gas 3/	-	1,007,970	-	-	1,069,855	-	-	20,600	58,666,145	11,302,551	6,251,752	17,554,303	76,220,448
Smithing	-	878	-	-	-	-	-	-	97,366	3,763	186	3,949	101,315
Storage	-	-	-	-	-	-	-	7,728	97,686	-	-	-	97,686
Use Not Reported	-	-	-	-	-	-	-	-	46,248	-	-	-	46,248
Canada Total 4/	-	-	-	-	-	-	-	-	2,373,269	8,885,679	199,088	9,084,767	11,458,036
Industrial	-	-	-	-	-	-	-	-	1,366,446	2,069,087	-	2,069,087	3,435,533
Retail Yards	-	-	-	-	-	-	-	-	714,985	10,026	-	10,026	725,011
Byproduct and Water Gas	-	-	-	-	-	-	-	-	271,588	2,084,950	-	2,084,950	2,356,538
Smithing	-	-	-	-	-	-	-	-	20,250	6	-	6	20,256
Storage or Consignment	-	-	-	-	-	-	-	-	-	4,721,610	-	4,721,610	4,721,610
Use Not Reported	-	-	-	-	-	-	-	-	-	-	199,088	199,088	199,088
U. S. and Canada Total	1,220,266	2,753,968	82,854	2,063,103	4,383,550	1,931,971	616,636	415,227	257,585,289	38,682,284	28,013,699	66,695,983	324,281,272
Industrial	653,237	336,375	18,410	1,195,850	918,354	998,469	241,828	303,718	124,482,872	13,511,030	17,278,770	30,789,800	155,272,672
Retail Yards	567,029	1,408,745	64,444	867,253	2,395,341	933,502	374,808	83,181	73,903,134	7,058,374	4,283,903	11,342,277	85,245,411
Byproduct and Water Gas 3/	-	1,007,970	-	-	1,069,855	-	-	20,600	58,937,733	13,387,501	6,251,752	19,639,253	78,576,986
Storage or Consignment	-	-	-	-	-	-	-	7,728	97,686	4,721,610	-	4,721,610	4,819,296
Smithing	-	878	-	-	-	-	-	-	117,616	3,769	186	3,955	121,571
Use Not Reported	-	-	-	-	-	-	-	-	46,248	-	199,088	199,088	245,336

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2. Exports Overseas 5/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Vessel and Bunker Fuel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Railroad Fuel-U.S. and Canada	5,908,290	10,083,753	11,704,636	9,529,384	745	1,090,136	785,445	12,412,977	6,443,485	20,902,272	7,161,495	162,794	3,426,899	109,403	2,031,092
5. Tidewater	12,312,783	1,773,135	4,152,230	-	-	43,671	12,386,385	6,168,076	1,019,073	450,172	-	-	1,240,722	35,206	439,363
6. Lake	1,923,254	5,898,246	3,655,124	3,720,839	-	406,128	8,149,841	18,638,039	346,053	114,867	-	-	-	-	-
7. Truck 6/	1,237,950	3,716,690	188,510	4,319,548	55,625	611,452	167,149	939,956	586,890	5,463,476	1,457,875	417,957	369,736	11,900	783,595
8. Distributors and Wholesalers (Destination and Use Unknown)	607,087	1,373,129	157,415	135,793	-	12,057	224,532	1,091,026	118,967	112,879	69,214	11,711	1,375	10,007	43,851
9. Private Railroads, Tramways, and Conveyors	291,448	1,013,591	391,166	42,814	-	769,960	130,227	368,343	45,604	115,060	466,508	-	335,730	-	-
10. Coal Used at Mine 7/	554,927	364,782	105,595	81,680	9,764	4,580	733,104	835,737	76,475	997,039	125,096	14,121	178,177	7,660	23,860
11. Other disposals not specified above	51	4,330	83	-	-	-	1,255	10,851	-	1,662	-	-	-	-	473
12. Net Change in Inventory	-17,431	69,785	-40,775	-2,794	-51	46	107,706	-24,707	10,749	19,227	-3,659	3,907	19,113	1,805	-5,513
Total Production Reported	42,677,174	64,185,068	38,156,849	29,050,233	101,270	4,134,412	48,889,303	95,731,532	16,048,679	64,317,216	21,148,989	1,273,441	15,702,426	1,507,459	8,356,189
13. Estimated Truck Production not Reported 8/	2,446,856	2,950,120	939,339	1,437,699	9,583	44,140	82,806	3,702,523	2,122,943	812,560	689,158	542,748	1,114,104	67,566	488,669
GRAND TOTAL	45,124,030	67,135,188	39,096,188	30,487,932	110,853	4,178,552	48,972,109	99,434,055	18,171,622	65,129,776	21,838,147	1,816,189	16,816,530	1,575,025	8,844,858

1/ Includes shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use as follows:
District 2, 731,350 tons; District 3, 15,078 tons; District 8, 8,625 tons; District 10, 27,872 tons; District 23, 3,397 tons.

2/ Represents the distribution of coal that moved from the mines via Lake and tidewater during this period to consumer states. The total tonnages arrived at in these columns represent the tonnages of interport shipments for all consumer uses (excluding shipments to all storage docks excepting those in Canada) plus the tonnages of ex-dock shipments as shown on Tables Nos. 2 and 3.

3/ Includes shipments to beehive coke ovens also.

4/ Certain transshippers are delinquent in filing data required particularly with respect to movements of coal for account of Canadian distributors who themselves arrange for transshipment. The total reported shipments of bituminous coal to Canada during the year ended June 30, 1946, including railroad fuel, was 17,414,919 tons and accounts for 89.8 percent of the grand total shipments to Canada. Reported shipments of railroad fuel to Canada are included in Item 4, "Railroad Fuel".

5/ The item export includes only shipments to tidewater ports for cargoes destined to points outside the United States and Canada as are reported to this office. The tonnages shown here are not all inclusive.

6/ Includes only mines with an average daily capacity of 50 tons or more and all mines with rail or river connections that report on Forms S.F.A. Nos. 38 and 56.

7/ Includes coal used to produce coal, coal used by mine employees and coal made into briquettes or packaged fuel at the reporting mine.

8/ Represents total truck tonnages reported for the Calendar Year 1945 less (1) tonnages included in Rail, River and Ex-river movement for shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use and (2) truck tonnage shown in Item 7. These approximate tonnages were those produced at small truck mines not required to report on Forms S.F.A. Nos. 38 and 56.

TABLE 1

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946 (continued)

REGION, STATE, AND USE	DISTRICT OF ORIGIN								Distribution of Total Production Reported on Forms S.F.A.Nos.38 and 56	Waterborne Shipments via Lake and Tidewater 2/			Grand Total Distribution
	16	17	18	19	20	21	22	23		Great Lakes	Tidewater	Total	
2. Exports Overseas 5/	-	-	-	-	-	-	-	-	-	-	11,305,042	11,305,042	11,305,042
3. Vessel and Bunker Fuel	-	-	-	-	-	-	-	-	-	2,292,064	1,167,872	3,459,936	3,459,936
4. Railroad Fuel-U.S. and Canada	63,566	1,571,995	82,232	5,995,555	843,025	123,590	3,159,736	327,425	103,919,930	4,430,300	436,371	4,866,671	108,786,601
5. Tidewater	-	154,008	-	5,016	107,773	-	-	1,346	40,288,959	-	-	-	-
6. Lake	-	-	-	-	-	—	-	-	42,852,391	-	-	-	-
7. Truck 6/	698,530	369,026	24,668	79,667	151,859	107,372	36,551	235,298	22,031,280	-	-	-	22,031,280
8. Distributors and Wholesalers (Destination and Use Unknown)	31	12,623	-	90,915	92,355	-	16,232	20,645	4,201,844	-	-	-	4,201,844
9. Private Railroads, Tramways, and Conveyors	17,930	7,752	23,534	-	1,494	-	-	14,855	4,036,016	-	-	-	4,036,016
10. Coal Used at Mine 7/	48,709	101,018	10,611	137,334	30,256	109,823	14,869	24,353	4,589,570	-	-	-	4,589,570
11. Other disposals not specified above	-	-	-	-	111	-	-	-	18,816	-	-	-	18,816
12. Net change in Inventory	1,440	1,366	-3,263	-483	22,976	147	-2,084	-45,395	112,112	-	-	-	112,112
Total Production Reported	2,050,472	4,971,756	220,636	8,371,107	5,633,399	2,272,903	3,841,940	993,754	479,636,207	45,404,648	40,922,984	86,327,632	482,822,489
13. Estimated Truck Production not reported 8/	77,957	300,949	60,223	43,411	73,180	342,158	118,699	192,421	18,659,812	-	-	-	18,659,812
GRAND TOTAL	2,128,429	5,272,705	280,859	8,414,518	5,706,579	2,615,061	3,960,639	1,186,175	498,296,019	45,404,648	40,922,984	86,327,632	501,482,301

TABLE 2

SHIPMENTS OF BITUMINOUS COAL VIA TIDEWATER TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE 1/

(In net tons of 2,000 pounds)

State of Destination and Use	DISTRICT OF ORIGIN (Interport shipments only to alongside consumers)																Total Shipments to alongside consumers	Ex-dock shipments from commercial docks 2/	Grand Total
	1	2	3	6	7	8	9	10	13	14	15	17	19	20	23	Unknown			
Connecticut																			
Total	108,258	4,741	19,408	-	724,125	378,795	-	-	-	-	-	-	-	-	-	-	1,235,327	1,521,138	2,756,465
Industrial	107,114	956	7,088	-	401,504	84,630	-	-	-	-	-	-	-	-	-	-	601,292	1,111,273	1,712,565
Retail Dealers	1,144	-	6,469	-	15,576	373	-	-	-	-	-	-	-	-	-	-	23,562	405,308	428,870
Byproduct	-	3,785	5,851	-	307,045	283,516	-	-	-	-	-	-	-	-	-	-	600,197	-	600,197
Water Gas	-	-	-	-	-	10,276	-	-	-	-	-	-	-	-	-	-	10,276	4,557	14,833
Delaware																			
Total	73	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	77
Industrial	73	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	77
Maine																			
Total	28,260	-	-	-	218,806	5,514	-	-	-	-	-	-	-	-	-	-	252,580	896,691	1,149,271
Industrial	28,260	-	-	-	197,466	2,190	-	-	-	-	-	-	-	-	-	-	227,916	578,118	806,034
Retail Dealers	-	-	-	-	21,340	3,324	-	-	-	-	-	-	-	-	-	-	24,664	315,300	339,964
Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,087	3,087
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	186
Maryland																			
Total	838,242	24,707	7,346	-	102,566	-	-	-	-	-	-	-	-	-	-	-	972,861	-	972,861
Industrial	838,242	5,409	4,282	-	-	-	-	-	-	-	-	-	-	-	-	-	847,933	-	847,933
Byproduct	-	-	-	-	102,566	-	-	-	-	-	-	-	-	-	-	-	102,566	-	102,566
Water Gas	-	19,298	3,064	-	-	-	-	-	-	-	-	-	-	-	-	-	22,362	-	22,362
Massachusetts																			
Total	119,115	6,668	13,954	-	1,786,517	276,659	-	-	-	-	-	-	-	-	-	-	2,202,913	4,058,163	6,261,076
Industrial	119,115	6,668	11,713	-	1,551,455	123,098	-	-	-	-	-	-	-	-	-	-	1,812,049	1,044,868	2,856,917
Retail Dealers	-	-	2,241	-	197,605	709	-	-	-	-	-	-	-	-	-	-	200,555	1,552,814	1,753,369
Byproduct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,458,899	1,458,899
Water Gas	-	-	-	-	37,457	152,852	-	-	-	-	-	-	-	-	-	-	190,309	1,582	191,891
New Hampshire																			
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368,239	368,239
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245,182	245,182
Retail Dealers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121,216	121,216
Water Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,841	1,841
New Jersey																			
Total	1,280,250	52,579	638,199	-	1,211,500	983,040	-	-	-	-	-	-	-	-	-	-	4,165,568	-	4,165,568
Industrial	1,280,250	47,185	602,761	-	713,675	-	-	-	-	-	-	-	-	-	-	-	2,643,871	-	2,643,871
Retail Dealers	-	-	-	-	373	277	-	-	-	-	-	-	-	-	-	-	650	-	650
Byproduct	-	5,394	35,438	-	398,970	982,763	-	-	-	-	-	-	-	-	-	-	1,422,565	-	1,422,565
Water Gas	-	-	-	-	98,482	-	-	-	-	-	-	-	-	-	-	-	98,482	-	98,482
New York																			
Total	5,810,460	254,599	866,177	-	901,571	703,740	-	-	-	-	-	-	-	-	-	-	8,536,547	206,719	8,743,266
Industrial	5,239,999	204,949	724,372	-	51,945	6,225	-	-	-	-	-	-	-	-	-	-	6,227,490	-	6,227,490
Retail Dealers	555,507	41,690	92,632	-	127,189	6,400	-	-	-	-	-	-	-	-	-	-	823,418	206,719	1,030,137
Byproduct	1,053	7,960	26,497	-	645,730	29,336	-	-	-	-	-	-	-	-	-	-	710,576	-	710,576
Water Gas	13,901	-	22,676	-	76,707	661,779	-	-	-	-	-	-	-	-	-	-	775,063	-	775,063
Pennsylvania																			
Total	1,521,817	15,843	270,093	-	203,379	122,753	-	-	-	-	-	-	-	-	-	-	2,133,885	-	2,133,885
Industrial	1,521,817	5,879	67,620	-	4,275	-	-	-	-	-	-	-	-	-	-	-	1,599,591	-	1,599,591
Byproduct	-	9,964	202,473	-	199,104	122,753	-	-	-	-	-	-	-	-	-	-	534,294	-	534,294
Rhode Island																			
Total	25,541	-	4,459	-	337,481	191,333	-	-	-	-	-	-	-	-	-	-	558,814	640,833	1,199,647
Industrial	25,298	-	4,459	-	190,029	22,330	-	-	-	-	-	-	-	-	-	-	242,116	38,568	280,684
Retail Dealers	243	-	-	-	1,359	-	-	-	-	-	-	-	-	-	-	-	1,602	602,265	603,867
Byproduct	-	-	-	-	58,377	20,120	-	-	-	-	-	-	-	-	-	-	78,497	-	78,497
Water Gas	-	-	-	-	87,716	148,883	-	-	-	-	-	-	-	-	-	-	236,599	-	236,599
Vermont																			
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27,588	27,588
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27,078	27,078
Retail Dealers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	510	510
Virginia																			
Total	935	-	-	-	26,081	172	-	-	-	-	-	-	-	-	-	-	27,188	-	27,188
Industrial	935	-	-	-	25,809	172	-	-	-	-	-	-	-	-	-	-	26,916	-	26,916
Retail Dealers	-	-	-	-	272	-	-	-	-	-	-	-	-	-	-	-	272	-	272
Washington																			
Total	1,565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,565	-	1,565
Industrial	1,565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,565	-	1,565
Unknown State																			
Total	385	280	1,001	-	3,970	1,201	-	-	-	-	-	-	-	-	-	-	6,837	-	6,837
Industrial	-	-	-	-	1,251	538	-	-	-	-	-	-	-	-	-	-	1,789	-	1,789
Retail Dealers	385	280	1,001	-	2,719	663	-	-	-	-	-	-	-	-	-	-	5,048	-	5,048
United States																			
Total	9,734,901	359,417	1,820,641	-	5,515,996	2,663,207	-	-	-	-	-	-	-	-	-	-	20,094,162	7,719,371	27,813,533
Industrial	9,162,668	271,046	1,422,299	-	3,137,409	239,183	-	-	-	-	-	-	-	-	-	-	14,232,605	3,045,087	17,277,692
Retail Dealers	557,279	41,970	102,343	-	366,433	11,746	-	-	-	-	-	-	-	-	-	-	1,079,771	3,204,132	4,283,903
Byproduct	1,053	27,103	270,259	-	1,711,792	1,438,488	-	-	-	-	-	-	-	-	-	-	3,448,695	1,458,899	4,907,594
Water Gas	13,901	19,298	25,740	-	300,362	973,790	-	-	-	-	-	-	-	-	-	-	1,333,091	11,067	1,344,158
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	186
Canada																			
Total	15,755	3,206	24,519	-	63,698	91,910	-	-	-	-	-	-	-	-	-	-	199,088	-	199,088
Use not reported	15,755	3,206	24,519	-	63,698	91,910	-	-	-	-	-	-	-	-	-	-	199,088	-	199,088
Alaska																			
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1,078	-	-	1,078	-	1,078
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	-	1,078	-	-	1,078	-	1,078
United States, Canada & Alaska																			
Total	9,750,656	362,623	1,845,160	-	5,579,694	2,755,117	-	-	-	-	-	-	-	1,078	-	-	20,294,328	7,719,371	28,013,699
Industrial	9,162,668	271,046	1,422,299	-	3,137,409	239,183	-	-	-	-	-	-	-	1,078	-	-	14,233,683	3,045,087	17,278,770
Retail Dealers	557,279	41,970	102,343	-	366,433	11,746	-	-	-	-	-	-	-	-	-	-	1,079,771	3,204,132	4,283,903
Byproduct	1,053	27,103	270,259	-	1,711,792	1,438,488	-	-	-	-	-	-	-	-	-	-	3,448,695	1,458,899	4,907,594
Water Gas	13,901	19,298	25,740	-	300,362	973,790	-	-	-	-	-	-	-	-	-	-	1,333,091	11,067	1,344,158
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	186
Use not reported	15,755	3,206	24,519	-	63,698	91,910	-	-	-	-	-	-	-	-	-	-	199,088	-	199,088
Railroad Fuel	-	-	-	-	-	393,870	-	-	-	-	-	-	-	-	-	-	393,870	42,501	436,371
Bunker Fuel	310,519	15,586	155,542	-	474,321	117,958	-	4,989	56,189	-	-	-	97	959	6,911	-	1,143,071	24,801	1,167,872
Exports Overseas 3/	3,479,632	1,291,368	914,929	18,797	888,387	1,287,608	1,577,199	143,262	949,425	6,766	545,504	147,830	28,013	26,061	-	261	11,305,042	-	11,305,042
GRAND TOTAL	13,540,807	1,669,577	2,915,631	18,797	6,942,402	4,554,553	1,577,199	148,251	1,005,614	6,766	545,504	147,830	28,110	28,098	6,911	261	33,136,311	7,786,673	40,922,984

1/ Represents the distribution of coal that moved from the mines via tidewater during the year ended June 30, 1946 to consumer states, by uses.
2/ District of origin of coal moving from commercial docks not ascertainable.
3/ This item includes only such shipments to tidewater ports for cargoes destined to points outside the United States and Canada as are reported to this office. The tonnages shown here are not all inclusive.

TABLE 3

SHIPMENTS OF BITUMINOUS COAL VIA GREAT LAKES TO ALONGSIDE CONSUMERS AND EX-DOCK SHIPMENTS FROM COMMERCIAL DOCKS AS REPORTED ON CARGO MANIFESTS, INVOICES, SUMMARY REPORTS AND FORM S.F.A. NO. 48 DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, STATE OF DESTINATION AND USE 1/
(In net tons of 2,000 pounds)

State of Destination and Use	DISTRICT OF ORIGIN (Interport shipments only to alongside consumers)									Total shipments to alongside Consumers	Ex-dock shipments from Commercial Docks 2/	Grand Total
	1	2	3	4	6	7	8	9	10			
Illinois												
Total		234,781	-	-	-	394,447	775,051	-	-	1,404,279	123,829	1,528,108
Industrial	-	-	-	-	-	-	-	-	-		47,745	47,745
Retail Dealers	-	-	-	-	-	5,729	23,921	-	-	29,650	76,084	105,734
Byproduct	-	234,781	-	-	-	388,718	751,130	-	-	1,374,629	-	1,374,629
Indiana												
Total	-	82,795	-	-	-	1,600,893	1,454,235	-	-	3,137,923	-	3,137,923
Byproduct	-	82,795	-	-	-	1,600,893	1,454,235	-	-	3,137,923	-	3,137,923
Iowa												
Total	-	-	-	-	-	-	-	-	-	-	79,711	79,711
Industrial	-	-	-	-	-	-	-	-	-	-	966	966
Retail Dealers	-	-	-	-	-	-	-	-	-	-	78,738	78,738
Smithing	-	-	-	-	-	-	-	-	-	-	7	7
Michigan												
Total	171,421	1,627,416	480,530	209,993	1,002	986,412	5,140,975	-	69,056	8,686,805	1,387,151	10,073,956
Industrial	171,421	1,279,860	202,156	200,189	1,002	361,898	3,448,654	-	64,024	5,729,204	553,050	6,282,254
Retail Dealers	-	6,095	-	9,687	-	5,998	280,536	-	5,032	307,348	818,789	1,126,137
Byproduct	-	331,089	278,374	117	-	618,516	1,411,785	-	-	2,639,881	13,611	2,653,492
Water Gas	-	10,372	-	-	-	-	-	-	-	10,372	-	10,372
Smithing	-	-	-	-	-	-	-	-	-	-	1,701	1,701
Minnesota												
Total	-	17,735	-	-	-	-	6,391	-	-	24,126	3,555,785	3,579,911
Industrial	-	17,735	-	-	-	-	6,391	-	-	24,126	1,227,413	1,251,539
Retail Dealers	-	-	-	-	-	-	-	-	-	-	1,895,221	1,895,221
Byproduct	-	-	-	-	-	-	-	-	-	-	426,181	426,181
Water Gas	-	-	-	-	-	-	-	-	-	-	5,454	5,454
Smithing	-	-	-	-	-	-	-	-	-	-	1,516	1,516
Nebraska												
Total	-	-	-	-	-	-	-	-	-	-	7,431	7,431
Retail Dealers	-	-	-	-	-	-	-	-	-	-	7,431	7,431
New York												
Total	324,955	728,452	389,017	71	16,063	708,081	202,198	-	-	2,368,837	43,191	2,412,028
Industrial	317,960	30,556	345,448	71	15,348	-	-	-	-	709,383	43,191	752,574
Retail Dealers	6,995	25,103	-	-	715	-	-	-	-	32,813	-	32,813
Byproduct	-	672,793	43,569	-	-	708,081	202,198	-	-	1,626,641	-	1,626,641
North Dakota												
Total	-	-	-	-	-	-	-	-	-	-	190,985	190,985
Industrial	-	-	-	-	-	-	-	-	-	-	37,624	37,624
Retail Dealers	-	-	-	-	-	-	-	-	-	-	153,245	153,245
Smithing	-	-	-	-	-	-	-	-	-	-	116	116
Ohio												
Total	-	-	-	-	-	85,289	264,065	-	-	349,354	-	349,354
Retail Dealers	-	-	-	-	-	260	498	-	-	758	-	758
Byproduct	-	-	-	-	-	85,029	263,567	-	-	348,596	-	348,596
Pennsylvania												
Total	-	-	-	-	-	53,236	137,962	-	-	191,198	-	191,198
Byproduct	-	-	-	-	-	53,236	137,962	-	-	191,198	-	191,198
South Dakota												
Total	-	-	-	-	-	-	-	-	-	-	303,502	303,502
Industrial	-	-	-	-	-	-	-	-	-	-	13,667	13,667
Retail Dealers	-	-	-	-	-	-	-	-	-	-	289,770	289,770
Smithing	-	-	-	-	-	-	-	-	-	-	65	65
Wisconsin												
Total	228,262	351,714	212,818	-	208	435,832	1,000,008	-	3,686	2,232,528	5,709,970	7,942,498
Industrial	228,262	329,835	198,069	-	208	19,745	86,860	-	3,686	866,665	2,188,909	3,055,574
Retail Dealers	-	-	-	-	-	13,858	30,600	-	-	44,458	3,314,043	3,358,501
Byproduct	-	21,879	14,749	-	-	402,229	882,548	-	-	1,321,405	206,546	1,527,951
Water Gas	-	-	-	-	-	-	-	-	-	-	114	114
Smithing	-	-	-	-	-	-	-	-	-	-	358	358
United States												
Total	724,638	3,042,893	1,082,365	210,064	17,273	4,264,190	8,980,885	-	72,742	18,395,050	11,401,555	29,796,605
Industrial	717,643	1,657,986	745,673	200,260	16,558	381,643	3,541,905	-	67,710	7,329,378	4,112,565	11,441,943
Retail Dealers	6,995	31,198	-	9,687	715	25,845	335,555	-	5,032	415,027	6,633,321	7,048,348
Byproduct	-	1,343,337	336,692	117	-	3,856,702	5,103,425	-		10,640,273	646,338	11,286,611
Water Gas	-	10,372	-	-	-	-	-	-	-	10,372	5,568	15,940
Smithing	-	-	-	-	-	-	-	-	-	-	3,763	3,763
Canada (excludes railroad fuel)												
Total	1,265,247	1,533,000	1,801,670	335,830	140,466	742,093	2,974,289	61,077	14,645	8,868,317	17,362	8,885,679
Industrial	434,224	236,185	602,687	74,684	3,158	237,963	411,779	61,077	-	2,061,757	7,330	2,069,087
Retail Dealers	-	-	-	-	-	-	-	-	-	-	10,026	10,026
Byproduct	93,276	363,342	21,780	-	-	208,916	1,210,254	-	14,645	1,912,213	-	1,912,213
Water Gas	-	83,692	-	-	-	-	89,045	-	-	172,737	-	172,737
Storage or Consignment 3/	737,747	849,781	1,177,203	261,146	137,308	295,214	1,263,211	-	-	4,721,610	-	4,721,610
Smithing	-	-	-	-	-	-	-	-	-	-	6	6
United States and Canada												
Total	1,989,885	4,575,893	2,884,035	545,894	157,739	5,006,283	11,955,174	61,077	87,387	27,263,367	11,418,917	38,682,284
Industrial	1,151,867	1,894,171	1,348,360	274,944	19,716	619,606	3,953,684	61,077	67,710	9,391,135	4,119,895	13,511,030
Retail Dealers	6,995	31,198	-	9,687	715	25,845	335,555	-	5,032	415,027	6,643,347	7,058,374
Byproduct	93,276	1,706,679	358,472	117	-	4,065,618	6,313,679	-	14,645	12,552,486	646,338	13,198,824
Water Gas	-	94,064	-	-	-	-	89,045	-	-	183,109	5,568	188,677
Storage or Consignment 3/	737,747	849,781	1,177,203	261,146	137,308	295,214	1,263,211	-	-	4,721,610	-	4,721,610
Smithing	-	-	-	-	-	-	-	-	-	-	3,769	3,769
Railroad Fuel-United States & Canada	23,848	320,467	241,152	1,224,507	85,689	58	123,934	342,555	60,890	2,423,100	2,007,200	4,430,300
Vessel Fuel	5,659	243,826	59,212	388,249	28,110	-	360,517	-	367	1,085,940	1,206,124	2,292,064
GRAND TOTAL	2,019,392	5,140,186	3,184,399	2,158,650	271,538	5,006,341	12,439,625	403,632	148,644	30,772,407	14,632,241	45,404,648

1/ Represents the distribution of coal that moved from mines via Great Lakes during the year ended June 30, 1946 to consumer states, by uses.
2/ District of origin of coal moving from commercial docks not ascertainable.
3/ Interport movement to Canada for storage or consignment is shown since Canadian Dock Operators are not required to file Form S.F.A. No. 48 reporting distribution from commercial docks.

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, USE, CONSOLIDATED SIZE GROUP AND METHOD OF MOVEMENT AS REPORTED ON FORMS S.F.A. NOS. 38, 48, and 56 AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

(In net tons of 2,000 pounds)

TABLE 4

Size Group and Movement / District and Use	All Lump Coal and All double Screened Coal with Top Size over 2" (1)					All Double Screened Coal with Top Size not Exceeding 2" (2)					M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)					All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)				
	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total
District 1. Eastern Pennsylvania																				
Total	1,612,706	105,084	80,080	108,224	1,906,094	1,284,441	207,352	228,040	72,955	1,792,788	18,329,394	11,270,433	1,087,575	923,365	31,610,767	1.793,769	284,544	160,831	36,033	2,275,177
Railroad Fuel	292,646	-	21,008	-	313,654	61,247	-	2,711	-	63,958	5,359,292	-	129	-	5,359,421	39,334	-	-	-	39,334
Industrial	554,688	3,220	2,736	-	560,644	823,977	22,246	72,810	-	919,033	9,138,197	7,309,857	739,094	-	17,187,148	1,249,628	278,362	41,619	-	1,569,609
Retail Dealers	722,865	37,534	737	-	761,136	361,552	177,301	2,620	-	541,473	786,282	299,452	3,638	-	1,089,372	98,002	5,510	-	-	103,512
Byproduct & Water Gas 5/	38,617	-	-	-	38,617	37,334	-	-	-	37,334	2,446,063	14,282	-	-	2,460,345	404,865	672	-	-	405,537
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	51,811	-	51,811	-	-	149,163	-	149,163	-	-	344,557	-	344,557	-	-	118,234	-	118,234
Bunker & Vessel Fuel	-	56,497	3,788	-	60,285	-	4,684	736	-	5,420	-	246,323	157	-	246,480	-	-	978	-	978
Export 6/	-	7,833	-	-	7,833	-	3,121	-	-	3,121	-	3,384,764	-	-	3,384,764	-	-	-	-	-
Use Not Reported	3,890	-	-	108,224	112,114	331	-	-	72,955	73,286	599,560	15,755	-	923,365	1,538,680	1,940	-	-	36,033	37,973
District 2. Western Pennsylvania																				
Total	4,468,452	76,412	595,795	1,440,596	6,581,255	1,784,155	35,376	228,103	332,339	2,379,973	41,134,301	1,437,892	3,606,658	1,116,058	47,294,909	3,603,993	49,653	639,773	627,318	4,920,737
Railroad Fuel	1,104,403	-	65,444	-	1,169,847	169,103	-	64	-	169,167	8,300,801	-	254,959	-	8,555,760	434,736	-	-	-	434,736
Industrial	1,419,178	27,925	49,944	-	1,497,047	916,190	27,393	46,586	-	990,169	7,397,421	159,513	1,666,698	-	9,223,632	2,050,137	28,619	81,373	-	2,160,129
Retail Dealers	1,477,628	8,765	6,095	-	1,492,488	489,891	7,213	1,171	-	498,275	82,956	18,292	-	-	101,248	164,700	746	23,932	-	189,378
Byproduct & Water Gas 5/	403,518	-	129,573	-	533,091	194,045	-	32,630	-	226,675	24,184,334	27,274	1,316,441	-	25,528,049	887,229	19,127	316,165	-	1,222,521
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	5,972	-	180,029	-	186,001	35	-	138,955	-	138,990	-	-	356,738	-	356,738	-	-	161,507	-	161,507
Bunker & Vessel Fuel	-	6,878	164,710	-	171,588	-	46	8,697	-	8,743	-	8,612	11,822	-	20,434	-	-	56,796	-	56,796
Export 6/	-	32,740	-	-	32,740	-	724	-	-	724	-	1,221,099	-	-	1,221,099	-	1,161	-	-	1,161
Use Not Reported	57,753	104	-	1,440,596	1,498,453	14,891	-	-	332,339	347,230	1,168,789	3,102	-	1,116,058	2,287,949	67,191	-	-	627,318	694,509
District 3. Northern West Virginia																				
Total 7/	1,781,348	981,710	342,657	22,088	3,127,803	5,538,908	64,787	625,801	67,166	6,296,662	17,594,616	1,181,119	1,244,952	91,006	20,111,693	2,141,916	82,988	456,193	38	2,681,135
Railroad Fuel	449,876	-	66,071	-	515,947	2,129,743	-	122,422	-	2,252,165	8,908,586	-	52,306	-	8,960,892	120,524	-	104	-	120,628
Industrial	363,841	4,380	33,516	-	401,737	1,943,942	4,709	99,471	-	2,048,122	4,394,989	865,880	530,955	-	5,791,824	1,773,661	75,252	278,337	-	2,127,250
Retail Dealers	874,095	16,205	-	-	890,300	1,104,190	18,153	-	-	1,122,343	365,216	29,698	-	-	394,914	193,306	2,962	-	-	196,268
Byproduct & Water Gas 5/	85,141	11,550	11,844	-	108,535	355,158	15,142	7,344	-	377,644	3,801,696	198,967	324,358	-	4,325,021	4,948	4,632	7,584	-	17,164
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	199,984	-	199,984	-	-	372,582	-	372,582	-	-	335,800	-	335,800	-	-	168,664	-	168,664
Bunker & Vessel Fuel	-	54,871	31,242	-	86,113	-	24,256	23,982	-	48,238	-	73,944	1,533	-	75,477	-	142	1,504	-	1,646
Export 6/	-	885,250	-	-	885,250	-	92	-	-	92	-	-	-	-	-	-	-	-	-	-
Use Not Reported	8,395	9,454	-	22,088	39,937	5,875	2,435	-	67,166	75,476	124,129	12,630	-	91,006	227,765	49,477	-	-	38	49,515
District 4. Ohio																				
Total	3,606,249	-	651,903	1,240,834	5,498,986	1,216,342	-	84,394	312,766	1,613,502	10,713,710	-	1,162,150	1,891,512	13,767,372	3,384,416	-	156,020	743,015	4,283,451
Railroad Fuel	1,398,410	-	201,044	-	1,599,454	18,646	-	7,466	-	26,112	7,832,971	-	1,011,780	-	8,844,751	228,172	-	1,853	-	230,025
Industrial	651,305	-	9,870	-	661,175	731,875	-	36,299	-	768,174	2,714,861	-	58,031	-	2,772,892	2,988,424	-	90,675	-	3,079,099
Retail Dealers	1,543,448	-	4,605	-	1,548,053	465,046	-	5,082	-	470,128	60,675	-	-	-	60,675	147,312	-	-	-	147,312
Byproduct & Water Gas	-	-	-	-	-	255	-	-	-	255	-	-	117	-	117	5,973	-	-	-	5,973
Storage	-	-	73,109	-	73,109	-	-	27,560	-	27,560	-	-	86,817	-	86,817	-	-	54,567	-	54,567
Bunker and Vessel Fuel	-	-	363,275	-	363,275	-	-	7,987	-	7,987	-	-	5,405	-	5,405	-	-	8,925	-	8,925
Use Not Reported	13,086	-	-	1,240,834	1,253,920	520	-	-	312,766	313,286	105,203	-	-	1,891,512	1,996,715	14,535	-	-	743,015	757,550
District 5. Michigan																				
Total	19,280	-	-	40,502	59,782	-	-	-	-	-	1,164	-	-	-	1,164	15,488	-	-	15,123	30,611
Railroad Fuel	699	-	-	-	699	-	-	-	-	-	-	-	-	-	-	46	-	-	-	46
Industrial	1,652	-	-	-	1,652	-	-	-	-	-	1,164	-	-	-	1,164	13,095	-	-	-	13,095
Retail Dealers	16,929	-	-	-	16,929	-	-	-	-	-	-	-	-	-	-	2,347	-	-	-	2,347
Use Not Reported	-	-	-	40,502	40,502	-	-	-	-	-	-	-	-	-	-	-	-	-	15,123	15,123
District 6. Panhandle																				
Total	222,450	-	152,535	172,819	547,804	136,261	-	42,267	34,796	213,324	2,378,488	18,797	15,054	361,531	2,773,870	166,237	-	26,527	31,435	224,199
Railroad Fuel	60,076	-	68,046	-	128,122	15,833	-	15,303	-	31,136	1,000,516	-	2,340	-	1,002,856	2,223	-	-	-	2,223
Industrial	104,190	-	2,473	-	106,663	71,176	-	-	-	71,176	1,369,350	-	-	-	1,369,350	153,542	-	15,506	-	169,048
Retail Dealers	56,899	-	-	-	56,899	49,252	-	715	-	49,967	106	-	-	-	106	10,472	-	-	-	10,472
Storage	-	-	56,738	-	56,738	-	-	26,156	-	26,156	-	-	12,714	-	12,714	-	-	8,810	-	8,810
Bunker & Vessel Fuel	-	-	25,278	-	25,278	-	-	93	-	93	-	-	-	-	-	-	-	2,211	-	2,211
Export 6/	-	-	-	-	-	-	-	-	-	-	-	18,797	-	-	18,797	-	-	-	-	-
Use Not Reported	1,285	-	-	172,819	174,104	-	-	-	34,796	34,796	8,516	-	-	361,531	370,047	-	-	-	31,435	31,435
District 7. Southern No. 1																				
Total	7,592,395	130,535	209,542	112,274	8,044,746	3,246,603	120,654	144,995	34,156	3,546,403	8,031,618	3,113,736	2,058,624	15,722	13,219,700	2,022,058	619,926	103,666	103	2,745,753
Railroad Fuel	39,466	-	58	-	39,524	19,123	-	-	-	19,123	555,393	-	-	-	555,393	49,476	-	-	-	49,476
Industrial	118,258	2,369	29,493	-	150,120	295,578	418	-	-	295,996	1,929,631	608,207	218,748	-	2,756,586	1,614,273	537,849	12,294	-	2,164,416
Retail Dealers	7,414,067	167	18,430	-	7,432,664	2,906,150	115,227	5,914	-	3,027,291	2,283,703	155,533	1,501	-	2,440,737	268,333	76,321	-	-	344,654
Byproduct & Water Gas 5/	3,574	1,139	2,618	-	7,331	21,132	-	11,619	-	32,751	3,061,399	1,188,810	1,834,634	-	6,084,843	83,811	1,077	91,372	-	176,260
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	-	-	158,943	-	158,943	-	-	127,462	-	127,462	-	-	3,741	-	3,741	-	-	-	-	-
Bunker & Vessel Fuel	-	37,318	-	-	37,318	-	5,009	-	-	5,009	-	358,570	-	-	358,570	-	4,022	-	-	4,022
Export 6/	-	85,480	-	-	85,480	-	-	-	-	-	-	743,032	-	-	743,032	-	657	-	-	657
Use Not Reported	17,030	4,062	-	112,274	133,366	4,620	-	-	34,156	38,776	201,492	59,584	-	15,722	276,798	6,165	-	-	103	6,268
District 8. Southern No. 2																				
Total	19,605,339	385,194	1,833,049	597,258	22,420,840	6,054,512	90,950	587,535	71,054	6,804,051	23,093,130	3,445,387	6,728,885	196,006	33,463,408	15,740,322	397,108	2,924,549	42,446	19,104,425
Railroad Fuel	968,892	12,350	39,330	-	1,020,572	243,439	710	-	-	244,149	9,365,964	322,832	59,743	-	9,748,539	1,689,869	22,699	24,861	-	1,737,429
Industrial	2,765,653	38,347	297,547	-	3,101,547	1,615,348	1,495	73,986	-	1,690,829	5,855,454	122,442	1,547,354	-	7,525,250	10,533,811	13,254	1,791,651	-	12,338,716
Retail Dealers	14,902,527	1,593	199,324	-	15,103,444	4,008,373	6,136	74,491	-	4,089,000	351,554	282	8,084	-	359,920	2,009,072	1,959	44,637	-	2,055,668
Byproduct & Water Gas 5/	819,807	186,615	562,659	-	1,569,081	151,349	69,553	44,337	-	265,239	6,703,150	1,766,812	4,928,421	-	13,398,383	1,357,319	348,014	766,621	-	2,471,954
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	26,874	-	463,448	-	490,322	-	-	390,752	-	390,752	494	-	176,396		176,890	48,783	-	229,399	-	278,182
Bunker & Vessel Fuel	-	22,280	270,741	-	293,021	-	1,317	3,969	-	5,286	-	91,558	8,887	-	100,445	-	2,803	67,380	-	70,183
Export 6/	-	99,686	-	-	99,686	-	11,692	-	-	11,692	-	1,073,921	-	-	1,073,921	-	8,379	-	-	8,379
Use Not Reported	121,586	24,323	-	597,258	743,167	36,003	47	-	71,054	107,104	816,514	67,540	-	196,006	1,080,060	101,468	-	-	42,446	143,914

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946, BY DISTRICT OF ORIGIN, USE, CONSOLIDATED SIZE GROUP AND METHOD OF MOVEMENT AS REPORTED ON FORMS S.F.A. NOS. 38, 48, and 56 AND CARGO MANIFESTS, INVOICES AND SUMMARY REPORTS

(In net tons of 2,000 pounds)

TABLE 4

Size Group and Movement	All Minus Resultant and Deducted Screenings with Top Size not exceeding 3/4" (5)					Total Columns 1 through 5 (6)					Size not reported (7)					Other disposals, use and size not specified (8)	Coal used at mines 4/ (9)	Net change in inventory (10)	Grand total Columns 6 through 10 (11)
District and Use	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total				
District 1. Eastern Pennsylvania																			
Total	3,569,245	1,552,355	462,866	97,373	5,681,839	26,589,555	13,419,768	2,019,392	1,237,950	43,266,665	76,085	121,039	-	-	197,124	51	554,927	-17,431	44,001,336
Railroad Fuel	155,705	-	-	-	155,705	5,908,224	-	23,848	-	5,932,072	66	-	-	-	66				
Industrial	3,012,871	1,542,120	295,608	-	4,850,599	14,779,361	9,155,805	1,151,867	-	25,087,033	-	6,863	-	-	6,863				
Retail Dealers	41,346	7,005	-	-	48,351	2,010,047	526,802	6,995	-	2,543,844	392	30,477	-	-	30,869				
Byproduct & Water Gas 5/	350,734	-	93,276	-	444,010	3,277,613	14,954	93,276	-	3,385,843	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	75,050	-	-	-	75,050				
Storage	7,800	-	73,982	-	81,782	7,800	-	737,747	-	745,547	-	-	-	-	-				
Bunker & Vessel Fuel	-	243	-	-	243	-	307,747	5,659	-	313,406	-	2,772	-	-	2,772				
Export 6/	-	2,987	-	-	2,987	-	3,398,705	-	-	3,398,705	-	80,927	-	-	80,927				
Use Not Reported	789	-	-	97,373	98,162	606,510	15,755	-	1,237,950	1,860,215	577	-	-	-	577				
District 2. Western Pennsylvania																			
Total	1,294,271	44,013	65,348	181,877	1,585,509	52,285,172	1,643,346	5,135,677	3,698,188	62,762,383	72,928	26,231	4,509	18,502	122,170	4,330	364,782	69,785	63,323,450
Railroad Fuel	64,572	-	-	-	64,572	10,073,615	-	320,467	-	10,394,082	10,138	-	-	-	10,138				
Industrial	777,169	27,544	47,583	-	852,296	12,560,095	270,994	1,892,184	-	14,723,273	9,872	52	1,987	-	11,911				
Retail Dealers	10,457	386	-	-	10,843	2,225,632	35,402	31,198	-	2,292,232	-	6,568	-	-	6,568				
Byproduct & Water Gas 5/	429,902	-	5,934	-	435,836	26,099,028	46,401	1,800,743	-	27,946,172	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	584	-	-	-	584				
Storage	-	-	11,831	-	11,831	6,007	-	849,060	-	855,067	-	-	721	-	721				
Bunker & Vessel Fuel	-	50	-	-	50	-	15,586	242,025	-	257,611	-	-	1,801	-	1,801				
Export 6/	-	16,033	-	-	16,033	-	1,271,757	-	-	1,271,757	-	19,611	-	-	19,611				
Use Not Reported	12,171	-	-	181,877	194,048	1,320,795	3,206	-	3,698,188	5,022,189	52,334	-	-	18,502	70,836				
District 3. Northern West Virginia																			
Total 7/	3,038,976	553,602	512,366	8,212	4,113,156	30,095,764	2,864,206	3,181,969	188,510	36,330,449	318	51,425	2,430	-	54,173	83	105,595	-40,775	36,449,525
Railroad Fuel	95,907	-	249	-	96,156	11,704,636	-	241,152	-	11,945,788	-	-	-	-	-				
Industrial	2,690,314	471,782	406,081	-	3,568,177	11,166,747	1,422,003	1,348,360	-	13,937,110	53	296	-	-	349				
Retail Dealers	47,822	15,464	-	-	63,286	2,584,629	82,482	-	-	2,667,111	-	19,861	-	-	19,861				
Byproduct & Water Gas 5/	204,933	65,708	7,342	-	277,983	4,451,876	295,999	358,472	-	5,106,347	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	265	-	-	-	265				
Storage	-	-	97,786	-	97,786	-	-	1,174.816	-	1,174,816	-	-	2,387	-	2,387				
Bunker & Vessel Fuel	-	648	908	-	1,556	-	153,861	59,169	-	213,030	-	1,681	43	-	1,724				
Export 6/	-	-	-	-	-	-	885,342	-	-	885,342	-	29,587	-	-	29,587				
Use Not Reported	-	-	-	8,212	8,212	187,876	24,519	-	188,510	400,905	-	-	-	-	-				
District 4. Ohio																			
Total	1,452,068	-	81,405	129,985	1,663,458	20,372,785	-	2,135,872	4,318,112	26,826,769	558,175	-	22,778	1,436	582,389	-	81,680	-2,794	27,488,044
Railroad Fuel	30,637	-	2,364	-	33,001	9,508,836	-	1,224,507	-	10,733,343	20,548	-	-	-	20,548				
Industrial	1,399,487	-	59,933	-	1,459,420	8,485,952	-	254,808	-	8,740,760	531,664	-	20,136	-	551,800				
Retail Dealers	15,537	-	-	-	15,537	2,232,018	-	9,687	-	2,241,705	4,515	-	-	-	4,515				
Byproduct & Water Gas	5,406	-	-	-	5,406	11,634	-	117	-	11,751	-	-	-	-	-				
Storage	-	-	18,124	-	18,124	-	-	260,177	-	260,177	-	-	969	-	969				
Bunker & Vessel Fuel	-	-	984	-	984	-	-	386,576	-	386,576	-	-	1,673	-	1,673				
Use Not Reported	1,001	-	-	129,985	130,986	134,345	-	-	4,318,112	4,452,457	1,448	-	-	1,436	2,884				
District 5. Michigan																			
Total	-	-	-	-	-	35,932	-	-	55,625	91,557	-	-	-	-	-	-	9,764	- 51	101,270
Railroad Fuel	-	-	-	-	-	745	-	-	-	745	-	-	-	-	-				
Industrial	-	-	-	-	-	15,911	-	-	-	15,911	-	-	-	-	-				
Retail Dealers	-	-	-	-	-	19,276	-	-	-	19,276	-	-	-	-	-				
Use Not Reported	-	-	-	-	-	-	-	-	55,625	55,625	-	-	-	-	-				
District 6. Panhandle																			
Total	165,099	-	32,169	10,656	207,924	3,068,535	18,797	268,552	611,237	3,967,121	-	-	2,986	215	3,201	-	4,580	46	3,974,948
Railroad Fuel	11,488	-	-	-	11,488	1,090,136	-	85,689	-	1,175,825	-	-	-	-	-				
Industrial	149,635	-	1,737	-	151,372	1,847,893	-	19,716	-	1,867,609	-	-	-	-	-				
Retail Dealers	1,720	-	-	-	1,720	118,449	-	715	-	119,164	-	-	-	-	-				
Storage	-	-	30,432	-	30,432	-	-	134,850	-	134,850	-	-	2,458	-	2,458				
Bunker & Vessel Fuel	-	-	-	-	-	-	-	27,582	-	27,582	-	-	528	-	528				
Export 6/	-	-	-	-	-	-	18,797	-	-	18,797	-	-	-	-	-				
Use Not Reported	2,256	-	-	10,656	12,912	12,057	-	-	611,237	623,294	-	-	-	215	215				
District 7. Southern No. 1																			
Total	6,238,174	2,906,676	2,473,952	4,894	11,623,696	27,130,848	6,891,527	4,990,779	167,149	39,180,303	213,015	50,875	15,562	-	279,452	1,255	733,104	107,706	40,301,820
Railroad Fuel	74,619	-	-	-	74,619	738,077	-	58	-	738,135	47,368	-	-	-	47,368				
Industrial	2,605,413	1,988,566	359,071	-	4,953,050	6,563,153	3,137,409	619,606	-	10,320,168	144,135	-	-	-	144,135				
Retail Dealers	221,754	19,185	-	-	240,939	13,094,007	366,433	25,845	-	13,486,285	474	-	-	-	474				
Byproduct & Water Gas 5/	3,334,959	821,128	2,110,900	-	6,266,987	6,504,875	2,012,154	4,051,143	-	12,568,172	-	-	14,475	-	14,475				
Smithing	-	-	-	-	-	-	-	-	-	-	17,656	-	-	-	17,656				
Storage	-	-	3,981	-	3,981	-	-	294,127	-	294,127	-	-	1,087	-	1,087				
Bunker & Vessel Fuel	-	68,450	-	-	68,450	-	473,369	-	-	473,369	-	952	-	-	952				
Export 6/	-	9,295	-	-	9,295	-	838,464	-	-	838,464	-	49,923	-	-	49,923				
Use Not Reported	1,429	52	-	4,894	6,375	230,736	63,698	-	167,149	461,583	3,382	-	-	-	3,382				
District 8. Southern No. 2																			
Total	4,496,776	166,864	354,674	15,965	5,034,279	68,990,079	4,485,503	12,428,692	922,729	86,827,003	173,501	69,050	10,933	17,227	270,711	10,851	835,737	-24,707	87,919,595
Railroad Fuel	113,512	6,448	-	-	119,960	12,381,676	365,039	123,934	-	12,870,649	31,301	28,831	-	-	60,132				
Industrial	3,883,766	63,645	243,146	-	4,190,557	24,654,032	239,183	3,953,684	-	28,846,899	120,384	-	-	-	120,384				
Retail Dealers	29,031	1,776	-	-	30,807	21,300,557	11,746	326,536	-	21,638,839	14,222	-	9,019	-	23,241				
Byproduct & Water Gas 5/	455,351	41,284	100,686	-	597,321	9,486,976	2,412,278	6,402,724	-	18,301,978	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	1,054	-	-	-	1,054				
Storage	-	-	1,513	-	1,513	76,151	-	1,261,508	-	1,337,659	-	-	1,703	-	1,703				
Bunker & Vessel Fuel	-	-	9,329	-	9,329	-	117,958	360,306	-	478,264	-	-	211	-	211				
Export 6/	-	53,711	-	-	53,711	-	1,247,389	-	-	1,247,389	-	40,219	-	-	40,219				
Use Not Reported	15,116	-	-	15,965	31,081	1,090,687	91,910	-	922,729	2,105,326	6,540	-	-	17,227	23,767				

TABLE 4

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946 (Continued)

Size Group and Movement / District and Use	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)					All Double Screened Coal with Top Size not exceeding 2" (2)					M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)					All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)				
	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total
		Tidewater	Lake				Tidewater	Lake				Tidewater	Lake				Tidewater	Lake		
District 9. West Kentucky																				
Total	3,571,457	13,242	88,626	452,009	4,125,334	1,023,398	25,248	–	24,427	1,073,073	6,260,324	1,538,709	266,037	36,045	8,101,115	2,776,849	–	25,938	62,849	2,865,636
Railroad Fuel	979,186	–	88,626	–	1,067,812	44,820	–	–	–	44,820	5,240,565	–	219,605	–	5,460,170	124,100	–	11,293	–	135,393
Industrial	694,898	–	–	–	694,898	252,124	–	–	–	252,124	720,665	–	46,432	–	767,097	2,007,785	–	14,645	–	2,022,430
Retail Dealers	1,895,807	–	–	–	1,895,807	721,921	–	–	–	721,921	207,087	–	–	–	207,087	640,082	–	–	–	640,082
Export 6/	–	13,242	–	–	13,242	–	25,248	–	–	25,248	–	1,538,709	–	–	1,538,709	–	–	–	–	–
Use Not Reported	1,566	–	–	452,009	453,575	4,533	–	–	24,427	28,960	92,007	–	–	36,045	128,052	4,882	–	–	62,849	67,731
District 10. Illinois																				
Total	17,095,890	124,312	21,012	2,803,221	20,044,435	2,606,073	9,084	3,248	692,178	3,310,583	14,550,555	3,054	56,136	61,996	14,671,741	20,015,931	–	54,862	1,722,959	21,793,752
Railroad Fuel	9,041,805	–	716	–	9,042,521	246,108	–	–	–	246,108	9,725,428	–	46,788	–	9,772,216	1,799,604	–	–	–	1,799,604
Industrial	1,300,461	–	5,554	–	1,306,015	976,990	–	246	–	977,236	4,799,014	–	9,348	–	4,808,362	14,090,959	–	52,562	–	14,143,521
Retail Dealers	6,689,747	–	680	–	6,690,427	1,208,126	–	2,105	–	1,210,231	11,472	–	–	–	11,472	4,069,464	–	2,247	–	4,071,711
Byproduct & Water Gas	17,309	–	13,748	–	31,057	173,931	–	897	–	174,828	229	–	–	–	229	29,306	–	–	–	29,306
Bunker & Vessel Fuel	–	–	314	–	314	–	–	–	–	–	–	–	–	–	–	–	–	53	–	53
Export 6/	–	124,312	–	–	124,312	–	9,084	–	–	9,084	–	3,054	–	–	3,054	–	–	–	–	–
Use Not Reported	46,568	–	–	2,803,221	2,849,789	918	–	–	692,178	693,096	14,412	–	–	61,996	76,408	26,598	–	–	1,722,959	1,749,557
District 11. Indiana																				
Total	8,121,213	–	–	754,023	8,875,236	1,853,063	–	–	183,917	2,036,980	1,292,674	–	–	148,245	1,440,919	7,149,443	–	–	315,297	7,464,740
Railroad Fuel	5,540,935	–	–	–	5,540,935	82,319	–	–	–	82,319	1,240,931	–	–	–	1,240,931	293,808	–	–	–	293,808
Industrial	746,839	–	–	–	746,839	1,093,590	–	–	–	1,093,590	49,902	–	–	–	49,902	6,383,675	–	–	–	6,383,675
Retail Dealers	1,750,179	–	–	–	1,750,179	671,866	–	–	–	671,866	1,610	–	–	–	1,610	423,707	–	–	–	423,707
Byproduct & Water Gas	74,829	–	–	–	74,829	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Use Not Reported	8,431	–	–	754,023	762,454	5,288	–	–	183,917	189,205	231	–	–	148,245	148,476	48,253	–	–	315,297	363,550
District 12. Iowa																				
Total	241,466	–	–	218,086	459,552	32,325	–	–	26,073	58,398	10,030	–	–	30,947	40,977	549,081	–	–	136,441	685,522
Railroad Fuel	141,164	–	–	–	141,164	8,006	–	–	–	8,006	–	–	–	–	–	13,624	–	–	–	13,624
Industrial	8,880	–	–	–	8,880	9,058	–	–	–	9,058	3,322	–	–	–	3,322	509,928	–	–	–	509,928
Retail Dealers	91,422	–	–	–	91,422	3,602	–	–	–	3,602	6,708	–	–	–	6,708	25,477	–	–	–	25,477
Use Not Reported	–	–	–	218,086	218,086	11,659	–	–	26,073	37,732	–	–	–	30,947	30,947	52	–	–	136,441	136,493
District 13. Southeastern																				
Total	1,246,143	21,384	–	186,304	1,453,831	313,612	1,438	–	12,166	327,216	5,292,501	888,997	–	140,183	6,321,681	5,883,765	92,855	–	17,874	5,994,494
Railroad Fuel	7,767	–	–	–	7,767	46	–	–	–	46	3,363,653	–	–	–	3,363,653	55,433	–	–	–	55,433
Industrial	356,938	–	–	–	356,938	117,830	–	–	–	117,830	810,548	–	–	–	810,548	195,264	–	–	–	195,264
Retail Dealers	879,329	–	–	–	879,329	195,736	–	–	–	195,736	22,575	–	–	–	22,575	72,802	–	–	–	72,802
Byproduct & Water Gas 5/	2,109	–	–	–	2,109	–	–	–	–	–	1,094,350	–	–	–	1,094,350	5,560,266	–	–	–	5,560,266
Smithing	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bunker & Vessel Fuel	–	405	–	–	405	–	–	–	–	–	–	22,288	–	–	22,288	–	33,046	–	–	33,046
Export 6/	–	20,979	–	–	20,979	–	1,438	–	–	1,438	–	866,709	–	–	866,709	–	59,809	–	–	59,809
Use Not Reported	–	–	–	186,304	186,304	–	–	–	12,166	12,166	1,375	–	–	140,183	141,558	–	–	–	17,874	17,874
District 14. Arkansas – Oklahoma																				
Total	782,829	296	–	8,815	791,940	55,802	–	–	441	56,243	280,013	6,470	–	2,644	289,127	141,842	–	–	–	141,842
Railroad Fuel	2,598	–	–	–	2,598	1,284	–	–	–	1,284	49,469	–	–	–	49,469	3,870	–	–	–	3,870
Industrial	15,209	–	–	–	15,209	8,273	–	–	–	8,273	100,173	–	–	–	100,173	73,867	–	–	–	73,867
Retail Dealers	758,779	–	–	–	758,779	43,860	–	–	–	43,860	106,361	–	–	–	106,361	55,776	–	–	–	55,776
Byproduct & Water Gas	411	–	–	–	411	376	–	–	–	376	22,297	–	–	–	22,297	8,329	–	–	–	8,329
Export 6/	–	296	–	–	296	–	–	–	–	–	–	6,470	–	–	6,470	–	–	–	–	–
Use Not Reported	5,832	–	–	8,815	14,647	2,009	–	–	441	2,450	1,713	–	–	2,644	4,357	–	–	–	–	–
District 15. Southwestern																				
Total	2,937,353	117,492	–	462,015	3,516,860	528,915	5,932	–	56,105	590,952	8/1,222,287	422,080	–	8/ 125,335	8/1,769,702	2,418,470	–	–	127,186	2,545,656
Railroad Fuel	1,059,798	–	–	–	1,059,798	33,818	–	–	–	33,818	8/ 876,262	–	–	–	8/ 876,262	60,164	–	–	–	60,164
Industrial	258,681	–	–	–	258,681	82,803	–	–	–	82,803	8/ 229,221	–	–	–	8/ 229,221	2,057,144	–	–	–	2,057,144
Retail Dealers	1,598,148	–	–	–	1,598,148	412,294	–	–	–	412,294	72,736	–	–	–	72,736	299,377	–	–	–	299,377
Byproduct & Water Gas	–	–	–	–	–	–	–	–	–	–	22,728	–	–	–	22,728	–	–	–	–	–
Export 6/	–	117,492	–	–	117,492	–	5,932	–	–	5,932	–	422,080	–	–	422,080	–	–	–	–	–
Use Not Reported	20,726	–	–	462,015	482,741	–	–	–	56,105	56,105	21,340	–	–	8/ 125,335	8/ 146,675	1,785	–	–	127,186	128,971
District 16. Northern Colorado																				
Total	401,980	–	–	348,140	750,120	67,990	–	–	131,303	199,293	13,278	–	–	9,782	23,060	690,475	–	–	192,536	883,011
Railroad Fuel	41,568	–	–	–	41,568	–	–	–	–	–	–	–	–	–	–	21,998	–	–	–	21,998
Industrial	38,289	–	–	–	38,289	3,360	–	–	–	3,360	13,196	–	–	–	13,196	499,442	–	–	–	499,442
Retail Dealers	322,092	–	–	–	322,092	64,630	–	–	–	64,630	82	–	–	–	82	169,035	–	–	–	169,035
Use Not Reported	31	–	–	348,140	348,171	–	–	–	131,303	131,303	–	–	–	9,782	9,782	–	–	–	192,536	192,536
District 17. Southern Colorado																				
Total	1,322,444	36,110	–	233,630	1,592,184	80,845	8,482	–	27,853	117,180	1,420,149	103,238	–	5,207	1,528,594	1,410,139	–	–	94,068	1,504,207
Railroad Fuel	48,185	–	–	–	48,185	14,328	–	–	–	14,328	1,260,603	–	–	–	1,260,603	236,514	–	–	–	236,514
Industrial	70,104	–	–	–	70,104	7,850	–	–	–	7,850	21,913	–	–	–	21,913	201,595	–	–	–	201,595
Retail Dealers	1,097,818	–	–	–	1,097,818	54,467	–	–	–	54,467	1,601	–	–	–	1,601	254,145	–	–	–	254,145
Byproduct & Water Gas 5/	95,826	–	–	–	95,826	3,950	–	–	–	3,950	136,032	–	–	–	136,032	716,023	–	–	–	716,023
Smithing	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Export 6/	–	36,110	–	–	36,110	–	8,482	–	–	8,482	–	103,238	–	–	103,238	–	–	–	–	–
Use Not Reported	10,511	–	–	233,630	244,141	250	–	–	27,853	28,103	–	–	–	5,207	5,207	1,862	–	–	94,068	95,930
District 18. New Mexico																				
Total	99,336	–	–	18,067	117,403	15,364	–	–	4,432	19,796	2,993	–	–	2,152	5,145	61,486	–	–	17	61,503
Railroad Fuel	39,690	–	–	–	39,690	–	–	–	–	–	–	–	–	–	–	33,809	–	–	–	33,809
Industrial	8,761	–	–	–	8,761	6,245	–	–	–	6,245	463	–	–	–	463	25,767	–	–	–	25,767
Retail Dealers	50,885	–	–	–	50,885	9,119	–	–	–	9,119	2,530	–	–	–	2,530	1,910	–	–	–	1,910
Use Not Reported	–	–	–	18,067	18,067	–	–	–	4,432	4,432	–	–	–	2,152	2,152	–	–	–	17	17

TABLE 4

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946 (Continued)

Size Group and Movement District and Use	All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)					Total Columns 1 through 5 (6)					Size not reported (7)					Other disposals, use and size not specified (8)	Coal uses at mines 4/ (9)	Net change in inventory (10)	Grand total Columns 6 through 10 (11)
	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total				
		Tidewater	Lake				Tidewater	Lake				Tidewater	Lake						
District 9. West Kentucky																			
Total	353,210	-	-	11,560	364,770	13,985,238	1,577,199	380,601	586,890	16,529,928	24,201	-	23,031	-	47,232	-	76,475	10,749	16,664,384
Railroad Fuel	54,814	-	-	-	54,814	6,443,485	-	319,524	-	6,763,009	-	-	23,031	-	23,031				
Industrial	274,567	-	-	-	274,567	3,950,039	-	61,077	-	4,011,116	9,756	-	-	-	9,756				
Retail Dealers	7,850	-	-	-	7,850	3,472,747	-	-	-	3,472,747	14,445	-	-	-	14,445				
Export 6/	-	-	-	-	-	-	1,577,199	-	-	1,577,199	-	-	-	-	-				
Use Not Reported	15,979	-	-	11,560	27,539	118,967	-	-	586,890	705,857	-	-	-	-	-				
District 10. Illinois																			
Total	2,999,010	-	-	178,648	3,177,658	57,267,459	136,450	135,258	5,459,002	62,998,169	3,314	11,801	13,386	4,474	32,975	1,662	997,039	19,227	64,049,072
Railroad Fuel	89,327	-	-	-	89,327	20,902,272	-	47,504	-	20,949,776	-	-	13,386	-	13,386				
Industrial	2,347,151	-	-	-	2,347,151	23,514,575	-	67,710	-	23,582,285	1,281	-	-	-	1,281				
Retail Dealers	540,132	-	-	-	540,132	12,518,941	-	5,032	-	12,523,973	50	-	-	-	50				
Byproduct and Water Gas	-	-	-	-	-	220,775	-	14,645	-	235,420	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	-	367	-	367	-	4,989	-	-	4,989				
Export 5/	-	-	-	-	-	-	136,450	-	-	136,450	-	6,812	-	-	6,812				
Use Not Reported	22,400	-	-	178,648	201,048	110,896	-	-	5,459,002	5,569,898	1,983	-	-	4,474	6,457				
District 11. Indiana																			
Total	1,055,457	-	-	35,531	1,090,988	19,471,850	-	-	1,437,013	20,908,863	97,827	-	-	20,862	118,689	-	125,096	-3,659	21,148,[illegible]
Railroad Fuel	-	-	-	-	-	7,157,993	-	-	-	7,157,993	3,502	-	-	-	3,502				
Industrial	1,026,450	-	-	-	1,026,450	9,300,456	-	-	-	9,300,456	87,979	-	-	-	87,979				
Retail Dealers	21,934	-	-	-	21,934	2,869,296	-	-	-	2,869,296	6,346	-	-	-	6,346				
Byproduct and Water Gas	62	-	-	-	62	74,891	-	-	-	74,891	-	-	-	-	-				
Use Not Reported	7,011	-	-	35,531	42,542	69,214	-	-	1,437,013	1,506,227	-	-	-	20,862	20,862				
District 12. Iowa																			
Total	-	-	-	2,375	2,375	832,902	-	-	413,922	1,246,824	4,554	-	-	4,035	8,589	-	14,121	3,907	1,273,441
Railroad Fuel	-	-	-	-	-	162,794	-	-	-	162,794	-	-	-	-	-				
Industrial	-	-	-	-	-	531,188	-	-	-	531,188	2,537	-	-	-	2,537				
Retail Dealers	-	-	-	-	-	127,209	-	-	-	127,209	2,017	-	-	-	2,017				
Use Not Reported	-	-	-	2,375	2,375	11,711	-	-	413,922	425,633	-	-	-	4,035	4,035				
District 13. Southeastern																			
Total	1,129,860	-	-	13,109	1,142,969	13,865,881	1,004,674	-	369,636	15,240,191	28,797	940	-	100	29,837	-	178,177	19,113	15,467,318
Railroad Fuel	-	-	-	-	-	3,426,899	-	-	-	3,426,899	-	-	-	-	-				
Industrial	1,126,098	-	-	-	1,126,098	2,606,678	-	-	-	2,606,678	6,668	-	-	-	6,668				
Retail Dealers	3,762	-	-	-	3,762	1,174,204	-	-	-	1,174,204	-	-	-	-	-				
Byproduct and Water Gas 5/	-	-	-	-	-	6,656,725	-	-	-	6,656,725	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	22,129	-	-	-	22,129				
Bunker and Vessel Fuel	-	-	-	-	-	-	55,739	-	-	55,739	-	450	-	-	450				
Export 6/	-	-	-	-	-	-	948,935	-	-	948,935	-	490	-	-	490				
Use Not Reported	-	-	-	13,109	13,109	1,375	-	-	369,636	371,011	-	-	-	100	100				
District 14. Arkansas-Oklahoma																			
Total	130,154	-	-	-	130,154	1,390,640	6,766	-	11,900	1,409,306	60,248	-	-	-	60,248	-	7,660	1,805	1,479,019
Railroad Fuel	4,472	-	-	-	4,472	61,693	-	-	-	61,693	47,710	-	-	-	47,710				
Industrial	60,403	-	-	-	60,403	257,925	-	-	-	257,925	9,001	-	-	-	9,001				
Retail Dealers	64,826	-	-	-	64,826	1,029,602	-	-	-	1,029,602	2,763	-	-	-	2,763				
Byproduct and Water Gas	-	-	-	-	-	31,413	-	-	-	31,413	774	-	-	-	774				
Export 6/	-	-	-	-	-	-	6,766	-	-	6,766	-	-	-	-	-				
Use Not Reported	453	-	-	-	453	10,007	-	-	11,900	21,907	-	-	-	-	-				
District 15. Southwestern																			
Total	645	-	-	8,939	9,584	7,107,670	545,504	-	779,580	8,432,754	6,741	-	-	4,015	10,756	473	23,860	-5,513	8,462,330
Railroad Fuel	-	-	-	-	-	2,030,042	-	-	-	2,030,042	1,050	-	-	-	1,050				
Industrial	645	-	-	-	645	2,628,494	-	-	-	2,628,494	1,253	-	-	-	1,253				
Retail Dealers	-	-	-	-	-	2,382,555	-	-	-	2,382,555	4,438	-	-	-	4,438				
Byproduct and Water Gas	-	-	-	-	-	22,728	-	-	-	22,728	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	545,504	-	-	545,504	-	-	-	-	-				
Use Not Reported	-	-	-	8,939	8,939	43,851	-	-	779,580	823,431	-	-	-	4,015	4,015				
District 16. Northern Colorado																			
Total	128,070	-	-	16,769	144,839	1,301,793	-	-	698,530	2,000,323	-	-	-	-	-	-	48,709	1,440	2,050,472
Railroad Fuel	-	-	-	-	-	63,566	-	-	-	63,566	-	-	-	-	-		-		
Industrial	116,880	-	-	-	116,880	671,167	-	-	-	671,167	-	-	-	-	-		-		
Retail Dealers	11,190	-	-	-	11,190	567,029	-	-	-	567,029	-	-	-	-	-		-		
Use Not Reported	-	-	-	16,769	16,769	31	-	-	698,530	698,561	-	-	-	-	-		-		
District 17. Southern Colorado																			
Total	102,172	-	-	8,268	110,440	4,335,749	147,830	-	369,026	4,852,605	10,589	-	-	-	10,589	-	101,018	1,366	4,965,578
Railroad Fuel	12,365	-	-	-	12,365	1,571,995	-	-	-	1,571,995	-	-	-	-	-				
Industrial	32,954	-	-	-	32,954	334,416	-	-	-	334,416	9,711	-	-	-	9,711				
Retail Dealers	714	-	-	-	714	1,408,745	-	-	-	1,408,745	-	-	-	-	-				
Byproduct and Water Gas 5/	56,139	-	-	-	56,139	1,007,970	-	-	-	1,007,970	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	-	878	-	-	-	878				
Export 6/	-	-	-	-	-	-	147,830	-	-	147,830	-	-	-	-	-				
Use Not Reported	-	-	-	8,268	8,268	12,623	-	-	369,026	381,649	-	-	-	-	-				
District 18. New Mexico																			
Total	9,441	-	-	-	9,441	188,620	-	-	24,668	213,288	-	-	-	-	-	-	10,611	-3,263	220,636
Railroad Fuel	8,733	-	-	-	8,733	82,232	-	-	-	82,232	-	-	-	-	-				
Industrial	708	-	-	-	708	41,944	-	-	-	41,944	-	-	-	-	-				
Retail Dealers	-	-	-	-	-	64,444	-	-	-	64,444	-	-	-	-	-				
Use Not Reported	-	-	-	-	-	-	-	-	24,668	24,668	-	-	-	-	-				

TABLE 4.

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946 (continued)

Size Group and Movement / District and Use	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)					All Double Screened Coal with Top Size not Exceeding 2" (2)					M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)					All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and Not Exceeding 2" (4)				
	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/ Tidewater	Interport 2/ Lake	Truck 3/	Total
District 19. Wyoming																				
Total	1,136,834	-	-	62,503	1,199,337	157,534	97	-	8,649	166,280	5,392,386	28,013	-	1,024	5,421,423	1,454,790	-	-	6,091	1,460,881
Railroad Fuel	367,486	-	-	-	367,486	35,542	-	-	-	35,542	5,278,256	-	-	-	5,278,256	314,271	-	-	-	314,271
Industrial	165,851	-	-	-	165,851	36,665	-	-	-	36,665	101,510	-	-	-	101,510	884,117	-	-	-	884,117
Retail Dealers	560,656	-	-	-	560,656	82,509	-	-	-	82,509	1,622	-	-	-	1,622	222,144	-	-	-	222,144
Bunker and Vessel Fuel	-	-	-	-	-	-	97	-	-	97	-	-	-	-	-	-	-	-	-	-
Export 6/	-	-	-	-	-	-	-	-	-	-	-	28,013	-	-	28,013	-	-	-	-	-
Use Not Reported	42,841	-	-	62,503	105,344	2,818	-	-	8,649	11,467	10,998	-	-	1,024	12,022	34,258	-	-	6,091	40,349
District 20. Utah																				
Total	1,768,103	1,029	-	110,798	1,879,930	201,855	49	-	334	202,238	1,702,355	26,971	-	119	1,729,445	1,583,567	-	-	39,893	1,623,460
Railroad Fuel	60,375	-	-	-	60,375	17,716	-	-	-	17,716	556,713	-	-	-	556,713	207,749	-	-	-	207,749
Industrial	148,068	1,029	-	-	149,097	12,153	-	-	-	12,153	105,685	-	-	-	105,685	590,079	-	-	-	590,079
Retail Dealers	1,491,972	-	-	-	1,491,972	110,106	-	-	-	110,106	23,992	-	-	-	23,992	769,062	-	-	-	769,062
Byproduct and Water Gas	4,807	-	-	-	4,807	61,880	-	-	-	61,880	1,003,168	-	-	-	1,003,168	-	-	-	-	-
Bunker and Vessel Fuel	-	-	-	-	-	-	49	-	-	49	-	910	-	-	910	-	-	-	-	-
Export 6/	-	-	-	-	-	-	-	-	-	-	-	26,061	-	-	26,061	-	-	-	-	-
Use Not Reported	62,881	-	-	110,798	173,679	-	-	-	334	334	12,797	-	-	119	12,916	16,677	-	-	39,893	56,570
District 21. North and South Dakota																				
Total	828,688	-	-	69,217	897,905	204,799	-	-	8,491	213,290	8/ 622,970	-	-	8/ 29,664	8/ 652,634	9/ 399,104	-	-	-	9/ 399,104
Railroad Fuel	16,922	-	-	-	16,922	1,761	-	-	-	1,761	8/ 63,214	-	-	-	8/ 63,214	9/ 41,693	-	-	-	9/ 41,693
Industrial	43,294	-	-	-	43,294	46,075	-	-	-	46,075	8/ 551,820	-	-	-	8/ 551,820	9/ 357,280	-	-	-	9/ 357,280
Retail Dealers	768,472	-	-	-	768,472	156,963	-	-	-	156,963	8/ 7,936	-	-	-	8/ 7,936	9/ 131	-	-	-	9/ 131
Use Not Reported	-	-	-	69,217	69,217	-	-	-	8,491	8,491	-	-	-	8/ 29,664	8/ 29,664	-	-	-	-	-
District 22. Montana																				
Total	350,077	-	-	29,148	379,225	112,118	-	-	4,903	117,021	3,035,939	-	-	-	3,035,939	200,893	-	-	2,270	203,163
Railroad Fuel	18,460	-	-	-	18,460	191	-	-	-	191	3,035,939	-	-	-	3,035,939	101,259	-	-	-	101,259
Industrial	67,607	-	-	-	67,607	17,727	-	-	-	17,727	-	-	-	-	-	80,516	-	-	-	80,516
Retail Dealers	263,933	-	-	-	263,933	94,200	-	-	-	94,200	-	-	-	-	-	10,453	-	-	-	10,453
Use Not Reported	77	-	-	29,148	29,225	-	-	-	4,903	4,903	-	-	-	-	-	8,665	-	-	2,270	10,935
District 23. Washington Only																				
Total	81,600	1,502	-	105,045	188,147	125,436	-	-	122,131	247,567	320,182	-	-	573	320,755	175,748	-	-	5,037	180,785
Railroad Fuel	1,434	-	-	-	1,434	228	-	-	-	228	282,909	-	-	-	282,909	42,854	-	-	-	42,854
Industrial	46,675	-	-	-	46,675	74,957	-	-	-	74,957	36,872	-	-	-	36,872	111,059	-	-	-	111,059
Retail Dealers	26,086	-	-	-	26,086	42,066	-	-	-	42,066	401	-	-	-	401	8,868	-	-	-	8,868
Byproduct and Water Gas	4,125	-	-	-	4,125	3,508	-	-	-	3,508	-	-	-	-	-	12,967	-	-	-	12,967
Bunker and Vessel Fuel	-	1,502	-	-	1,502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	3,132	-	-	-	3,132	4,596	-	-	-	4,596	-	-	-	-	-	-	-	-	-	-
Use Not Reported	148	-	-	105,045	105,193	81	-	-	122,131	122,212	-	-	-	573	573	-	-	-	5,037	5,037
District not Reported																				
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Export 6/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (excluding ex-dock movement)																				
Total	78,893,632	1,994,302	3,975,199	9,595,616	94,458,749	26,640,351	569,449	1,944,383	2,228,635	31,382,818	162,695,057	23,484,896	16,226,071	5,189,116	207,595,140	73,779,782	1,527,074	4,548,359	4,218,029	84,073,244
Railroad Fuel	21,681,841	12,350	550,343	-	22,244,534	3,143,301	710	147,966	-	3,291,977	72,297,465	322,832	1,647,650	-	74,267,947	5,915,130	22,699	38,111	-	5,975,940
Industrial	9,949,320	77,270	431,133	-	10,457,723	9,143,786	56,261	329,398	-	9,529,445	40,345,371	9,065,899	4,816,660	-	54,227,930	48,445,048	933,336	2,378,662	-	51,757,046
Retail Dealers	45,253,783	64,264	229,871	-	45,547,918	13,255,919	324,030	92,098	-	13,672,047	4,397,205	503,257	13,223	-	4,913,685	9,915,977	87,498	70,816	-	10,074,291
Byproduct and Water Gas 5/	1,550,073	199,304	720,442	-	2,469,819	1,002,918	84,695	96,827	-	1,184,440	42,475,446	3,196,145	8,403,971	-	54,075,562	9,071,036	373,522	1,181,742	-	10,626,300
Smithing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storage	35,978	-	1,184,062	-	1,220,040	4,631	-	1,232,630	-	1,237,261	494	-	1,316,763	-	1,317,257	48,783	-	741,181	-	789,964
Bunker and Vessel Fuel	-	179,751	859,348	-	1,039,099	-	35,458	45,464	-	80,922	-	802,205	27,804	-	830,009	-	40,013	137,847	-	177,860
Export 6/	-	1,423,420	-	-	1,423,420	-	65,813	-	-	65,813	-	9,435,947	-	-	9,435,947	-	70,006	-	-	70,006
Use Not Reported	422,637	37,943	-	9,595,616	10,056,196	89,796	2,482	-	2,228,635	2,320,913	3,179,076	158,611	-	5,189,116	8,526,803	383,808	-	-	4,218,029	4,601,837
Tidewater-ex-dock movement 11/																				
Total	-	-	-	-	127,001	-	-	-	-	1,493,464	-	-	-	-	3,339,366	-	-	-	-	9/ 2,732,302
Railroad Fuel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,953	-	-	-	-	9/ 36,548
Industrial	-	-	-	-	36,675	-	-	-	-	513,719	-	-	-	-	1,084,985	-	-	-	-	9/ 1,343,380
Retail Dealers	-	-	-	-	84,229	-	-	-	-	976,136	-	-	-	-	1,068,708	-	-	-	-	9/ 1,046,847
Byproduct and Water Gas	-	-	-	-	5,674	-	-	-	-	3,087	-	-	-	-	1,159,884	-	-	-	-	9/ 301,321
Smithing	-	-	-	-	186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bunker and Vessel Fuel	-	-	-	-	237	-	-	-	-	522	-	-	-	-	19,836	-	-	-	-	9/ 4,206
Lake-ex-dock movement 11/																				
Total	-	-	-	-	3,302,065	-	-	-	-	1,914,926	-	-	-	-	3,072,444	-	-	-	-	9/ 6,342,717
Railroad Fuel	-	-	-	-	28,077	-	-	-	-	5,415	-	-	-	-	1,811,126	-	-	-	-	9/ 162,582
Industrial	-	-	-	-	376,513	-	-	-	-	337,136	-	-	-	-	192,544	-	-	-	-	9/ 3,213,702
Retail Dealers	-	-	-	-	2,684,928	-	-	-	-	1,490,761	-	-	-	-	238,897	-	-	-	-	9/ 2,228,672
Byproduct and Water Gas	-	-	-	-	13,787	-	-	-	-	173	-	-	-	-	46,163	-	-	-	-	9/ 591,783
Smithing	-	-	-	-	79	-	-	-	-	206	-	-	-	-	3,016	-	-	-	-	9/ 468
Bunker and Vessel Fuel	-	-	-	-	198,681	-	-	-	-	81,235	-	-	-	-	780,698	-	-	-	-	9/ 145,510
GRAND TOTAL	-	-	-	-	97,887,815	-	-	-	-	34,791,208	-	-	-	-	214,006,950	-	-	-	-	93,148,263

1/ Includes shipments by truck to byproduct and beehive coke ovens away from the producing mine and for smithing use as follows: District 2, 731,350 tons; District 3, 15,078 tons; District 8, 8,625 tons; District 10, 27,872 tons; District 23, 3,397 tons.

2/ Includes shipments via tidewater to alongside consumers and via Great Lakes to alongside consumers and for consignment to Canada.

3/ Truck data not reported by use.

4/ Includes coal used to produce coal, coal used by mine employees, and coal made into briquets or packaged fuel at the reporting mine.

5/ Includes shipments to beehive coke ovens.

6/ This item includes only such shipments to tidewater ports for cargoes destined to points outside the United States and Canada as are reported to this office. The tonnages shown here are not all inclusive.

7/ In the case of District 3, the tonnages shown in Column 1 for the all rail, river, and ex-river movement and truck movement represent lump coal and double screened coal with a bottom size larger than 2". The tonnages shown in Column 2 for these same movements represent lump coal and double screened coal with a bottom size 2" and smaller.

8/ Includes some crushed lignite.

9/ Includes all screenings. Breakdown of size of screenings not reported.

10/ Included with "All minus resultant and dedusted screenings with top size over 3/4" and not exceeding 2".

11/ District of origin not ascertainable.

TABLE 4

SHIPMENTS OF BITUMINOUS COAL AND LIGNITE DURING THE YEAR ENDED JUNE 30, 1946 (continued)

Size Group and Movement	All Mines Resultant and Deducted Screenings with Top Size not exceeding 3/4" (5)					Total Columns 1 through 5 (6)					Size not reported (7)					Other disposals, use and size not specified (8)	Coal used at mines 4/ (9)	Net change in inventory (10)	Grand total Columns 6 through 10 (11)
	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total	All-Rail River and Ex-River 1/	Interport 2/		Truck 3/	Total				
District and Use		Tidewater	Lake				Tidewater	Lake				Tidewater	Lake						
District 19. Wyoming																			
Total	8,029	-	-	1,400	9,429	8,149,573	28,110	-	79,667	8,257,350	-	-	-	-	-	-	137,334	-483	8,394,201
Railroad Fuel	-	-	-	-	-	5,995,555	-	-	-	5,995,555	-	-	-	-	-				
Industrial	7,707	-	-	-	7,707	1,195,850	-	-	-	1,195,850	-	-	-	-	-				
Retail Dealers	322	-	-	-	322	867,253	-	-	-	867,253	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	97	-	-	97	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	28,013	-	-	28,013	-	-	-	-	-				
Use Not Reported	-	-	-	1,400	1,400	90,915	-	-	79,667	170,582	-	-	-	-	-				
District 20. Utah																			
Total	64,544	49	-	-	64,593	5,320,424	28,098	-	151,144	5,499,666	-	-	-	715	715	111	30,256	22,976	5,553,724
Railroad Fuel	472	-	-	-	472	843,025	-	-	-	843,025	-	-	-	-	-				
Industrial	63,863	49	-	-	63,912	919,848	1,078	-	-	920,926	-	-	-	-	-				
Retail Dealers	209	-	-	-	209	2,395,341	-	-	-	2,395,341	-	-	-	-	-				
Byproduct and Water Gas	-	-	-	-	-	1,069,855	-	-	-	1,069,855	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	959	-	-	959	-	-	-	-	-				
Export 6/	-	-	-	-	-	-	26,061	-	-	26,061	-	-	-	-	-				
Use Not Reported	-	-	-	-	-	92,355	-	-	151,144	243,499	-	-	-	715	715				
District 21. North & South Dakota																			
Total	10/	-	-	-	10/	2,055,561	-	-	107,372	2,162,933	-	-	-	-	-	-	109,823	147	2,272,903
Railroad Fuel	10/	-	-	-	10/	123,590	-	-	-	123,590	-	-	-	-	-				
Industrial	10/	-	-	-	10/	998,469	-	-	-	998,469	-	-	-	-	-				
Retail Dealers	10/	-	-	-	10/	933,502	-	-	-	933,502	-	-	-	-	-				
Use Not Reported	-	-	-	-	-	-	-	-	107,372	107,372	-	-	-	-	-				
District 22. Montana																			
Total	93,577	-	-	230	93,807	3,792,604	-	-	36,551	3,829,155	-	-	-	-	-	-	14,869	-2,084	3,841,940
Railroad Fuel	3,887	-	-	-	3,887	3,159,736	-	-	-	3,159,736	-	-	-	-	-				
Industrial	75,978	-	-	-	75,978	241,828	-	-	-	241,828	-	-	-	-	-				
Retail Dealers	6,222	-	-	-	6,222	374,808	-	-	-	374,808	-	-	-	-	-				
Use Not Reported	7,490	-	-	230	7,720	16,232	-	-	36,551	52,783	-	-	-	-	-				
District 23. Washington Only																			
Total	75,186	-	-	2,512	77,698	778,152	1,502	-	235,298	1,014,952	-	5,409	-	-	5,409	-	24,353	-45,395	999,319
Railroad Fuel	-	-	-	-	-	327,425	-	-	-	327,425	-	-	-	-	-				
Industrial	49,010	-	-	-	49,010	318,573	-	-	-	318,573	-	-	-	-	-				
Retail Dealers	5,760	-	-	-	5,760	83,181	-	-	-	83,181	-	-	-	-	-				
Byproduct and Water Gas	-	-	-	-	-	20,600	-	-	-	20,600	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	-	-	1,502	-	-	1,502	-	5,409	-	-	5,409				
Storage	-	-	-	-	-	7,728	-	-	-	7,728	-	-	-	-	-				
Use Not Reported	20,416	-	-	2,512	22,928	20,645	-	-	235,298	255,943	-	-	-	-	-				
District Not Reported																			
Total	-	-	-	-	-	-	-	-	-	-	-	261	-	-	261	-	-	-	261
Export 6/	-	-	-	-	-	-	-	-	-	-	-	261	-	-	261				
Total (excluding ex-dock movement)																			
Total	26,403,964	5,223,559	3,982,780	728,303	36,338,606	368,412,786	32,799,280	30,676,792	21,959,699	453,848,557	1,330,293	337,031	95,615	71,581	1,834,520	18,816	4,589,570	112,112	460,403,575
Railroad Fuel	720,510	6,448	2,613	-	729,571	103,758,247	365,039	2,386,683	-	106,509,969	161,683	28,831	36,417	-	226,931				
Industrial	19,701,069	4,093,706	1,413,159	-	25,207,934	127,584,594	14,226,472	9,369,012	-	151,180,078	934,294	7,211	22,123	-	963,628				
Retail Dealers	1,030,588	43,816	-	-	1,074,404	73,853,472	1,022,865	406,008	-	75,282,345	49,662	56,906	9,019	-	115,587				
Byproduct and Water Gas 5/	4,837,486	928,120	2,318,138	-	8,083,744	58,936,959	4,781,786	12,721,120	-	76,439,865	774	-	14,475	-	15,249				
Smithing	-	-	-	-	-	-	-	-	-	-	117,616	-	-	-	117,616				
Storage	7,800	-	237,649	-	245,449	97,686	-	4,712,285	-	4,809,971	-	-	9,325	-	9,325				
Bunker and Vessel Fuel	-	69,391	11,221	-	80,612	-	1,126,818	1,081,684	-	2,208,502	-	16,253	4,256	-	20,509				
Export 6/	-	82,026	-	-	82,026	-	11,077,212	-	-	11,077,212	-	227,830	-	-	227,830				
Use Not Reported	106,511	52	-	728,303	834,866	4,181,828	199,088	-	21,959,699	26,340,615	66,264	-	-	71,581	137,845				
Tidewater - ex-dock movement 11/																			
Total	-	-	-	-	10/	-	-	-	-	7,692,133	-	-	-	-	94,540	-	-	-	7,786,673
Railroad Fuel	-	-	-	-	10/	-	-	-	-	42,501	-	-	-	-	-				
Industrial	-	-	-	-	10/	-	-	-	-	2,978,759	-	-	-	-	66,328				
Retail Dealers	-	-	-	-	10/	-	-	-	-	3,175,920	-	-	-	-	28,212				
Byproduct and Water Gas	-	-	-	-	10/	-	-	-	-	1,469,966	-	-	-	-	-				
Smithing	-	-	-	-	-	-	-	-	-	186	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	10/	-	-	-	-	24,801	-	-	-	-	-				
Lake - ex-dock movement 11/																			
Total	-	-	-	-	10/	-	-	-	-	14,632,152	-	-	-	-	89	-	-	-	14,632,241
Railroad	-	-	-	-	10/	-	-	-	-	2,007,200	-	-	-	-	-				
Industrial	-	-	-	-	10/	-	-	-	-	4,119,895	-	-	-	-	-				
Retail Dealers	-	-	-	-	10/	-	-	-	-	6,643,258	-	-	-	-	89				
Byproduct and Water Gas	-	-	-	-	10/	-	-	-	-	651,906	-	-	-	-	-				
Smithing	-	-	-	-	10/	-	-	-	-	3,769	-	-	-	-	-				
Bunker and Vessel Fuel	-	-	-	-	10/	-	-	-	-	1,206,124	-	-	-	-	-				
GRAND TOTAL	-	-	-	-	36,338,606	-	-	-	-	476,172,842	-	-	-	-	1,929,149	18,816	4,589,570	112,112	482,822,489

RECAPITULATION OF THE DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56,
BY DISTRICT OF ORIGIN, METHOD OF MOVEMENT, AND/OR USE
(In Net Tons of 2,000 Pounds)

TABLE 5

(Includes mines with an average daily capacity of 50 tons or more and all mines, washeries, and preparation plants with rail or river connections)

Method of Movement and/or Use	DISTRICT OF ORIGIN											
	1	2	3	4	5	6	7	8	9	10	11	12
Total all-rail movements - Industrial Use	14,487,913	9,340,385	10,457,578	8,839,188	15,911	422,335	6,577,061	21,834,705	3,663,384	20,210,075	8,921,927	533,725
Total all-rail movements - Retail Dealers	2,010,439	2,046,785	2,552,943	2,236,533	19,276	118,449	13,094,481	20,356,315	3,424,616	12,328,719	2,875,642	129,226
Total shipments of railroad fuel, other than shipments to tidewater and lake	5,908,290	10,083,753	11,704,636	9,529,384	745	1,090,136	785,445	12,412,977	6,443,485	20,902,272	7,161,495	162,794
Total shipments of coal to byproduct and beehive coke plants, other than to tidewater and lake	3,277,613	26,099,028	4,451,876	11,634	-	-	6,504,875	9,486,976	-	220,775	74,891	-
Total shipments of smithing coal, other than to tidewater and lake	75,050	584	265	-	-	-	17,656	1,054	-	-	-	-
Total river shipments, other than for railroad fuel, byproduct or smithing use	-	2,277,901	261,354	135,614	-	655,598	-	2,487,402	313,383	3,370,132	-	-
Total ex-river shipments, other than for railroad fuel, byproduct or smithing use	-	116,937	88,388	-	-	-	-	1,042,430	-	10,861	-	-
Total shipments to tidewater	12,312,783	1,773,135	4,152,230	-	-	43,671	12,386,385	6,168,076	1,019,073	450,172	-	-
Total shipments to the Great Lakes	1,923,254	5,898,246	3,655,124	3,720,839	-	406,128	8,149,841	18,638,039	346,053	114,867	-	-
Total shipments to distributors and wholesalers where the final destination and use are not known	607,087	1,373,129	157,415	135,793	-	12,057	224,532	1,091,026	118,967	112,879	69,214	11,711
Total all-rail, river and ex-river shipments to storage piles	7,800	6,007	30,461	-	-	-	9,586	82,352	-	-	-	-
Shipments by truck or wagon, other than deliveries to byproduct plants and to coke ovens and for smithing use	1,237,950	3,716,690	188,510	4,319,548	55,625	611,452	167,149	939,956	586,890	5,463,476	1,457,875	417,957
Shipments via private railroad, other than deliveries to byproduct plants and to coke ovens and for smithing use	-	114,727	42	31,136	-	-	-	1,357	-	-	-	-
Shipments via tramway, other than deliveries to byproduct plants and to coke ovens and for smithing use	23,952	142,566	-	11,678	-	21	-	327,774	36,848	-	-	-
Shipments via conveyor belt, other than deliveries to byproduct plants and to coke ovens and for smithing use	267,496	756,298	391,124	-	-	769,939	130,227	39,212	8,756	115,060	466,508	-
Total Tonnage Shipped	42,139,627	63,746,171	38,091,946	28,971,347	91,557	4,129,786	48,047,238	94,909,651	15,961,455	63,299,288	21,027,552	1,255,413
Coal used by mine employees	152,025	290,672	65,200	54,876	1,785	1,893	412,787	717,282	23,164	265,984	26,134	10,966
Coal used to produce coal	402,902	74,110	40,395	26,804	7,979	2,687	163,937	118,455	53,311	731,055	98,962	3,155
Coal made into briquettes or packaged fuel at the reporting mine	-	-	-	-	-	-	156,380	-	-	-	-	-
Other disposals not specified above	51	4,330	83	-	-	-	1,255	10,851	-	1,662	-	-
Total Tons Shipped or Used	42,694,605	64,115,283	38,197,624	29,053,027	101,321	4,134,366	48,781,597	95,756,239	16,037,930	64,297,989	21,152,648	1,269,534
Net Change in Inventories	-17,431	69,785	-40,775	-2,794	-51	46	107,706	-24,707	10,749	19,227	-3,659	3,907
Total Production Reported	42,677,174	64,185,068	38,156,849	29,050,233	101,270	4,134,412	48,889,303	95,731,532	16,048,679	64,317,216	21,148,989	1,273,441
Percent of Estimated Production	84.4	93.1	95.7	93.1	84.4	100.1	97.4	93.3	85.9	99.3	96.0	70.0

RECAPITULATION OF THE DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED DURING THE YEAR ENDED JUNE 30, 1946, AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56,
BY DISTRICT OF ORIGIN, METHOD OF MOVEMENT, AND/OR USE
(In Net Tons of 2,000 Pounds)

TABLE 5

(Includes mines with an average daily capacity of 50 tons or more and all mines, washeries, and preparation plants with rail or river connections)

Method of Movement and/or Use	DISTRICT OF ORIGIN											
	13	14	15	16	17	18	19	20	21	22	23	Total
Total all-rail movements - Industrial Use	2,120,740	266,926	2,629,747	653,237	336,375	18,410	1,195,850	918,354	998,469	241,828	303,718	114,987,841
Total all-rail movements - Retail Dealers	1,174,204	1,032,365	2,386,993	567,029	1,408,745	64,444	867,253	2,395,341	933,502	374,808	83,181	72,481,289
Total shipments of railroad fuel, other than shipments to tidewater and lake	3,426,899	109,403	2,031,092	63,566	1,571,995	82,232	5,995,555	843,025	123,590	3,159,736	327,425	103,919,930
Total shipments of coal to byproduct and beehive coke plants, other than to tidewater and lake	6,656,725	32,187	22,728	-	1,007,970	-	-	1,069,855	-	-	20,600	58,937,733
Total shipments of smithing coal, other than to tidewater and lake	22,129	-	-	-	878	-	-	-	-	-	-	117,616
Total river shipments, other than for railroad fuel, byproduct or smithing use	156,876	-	-	-	-	-	-	-	-	-	-	9,658,260
Total ex-river shipments, other than for railroad fuel, byproduct or smithing use	-	-	-	-	-	-	-	-	-	-	-	1,258,616
Total shipments to tidewater	1,240,722	35,206	439,363	-	154,008	-	5,016	107,773	-	-	1,346	40,288,959
Total shipments to the Great Lakes	-	-	-	-	-	-	-	-	-	-	-	42,852,391
Total shipments to distributors and wholesalers where the final destination and use are not known	1,375	10,007	43,851	31	12,623	-	90,915	92,355	-	16,232	20,645	4,201,844
Total all-rail, river and ex-river shipments to storage piles	-	-	-	-	-	-	-	-	-	-	7,728	143,934
Shipments by truck or wagon, other than deliveries to byproduct plants and to coke ovens and for smithing use	369,736	11,900	783,595	698,530	369,026	24,668	79,667	151,859	107,372	36,551	235,298	22,031,280
Shipments via private railroad, other than deliveries to byproduct plants and to coke ovens and for smithing use	312,551	-	-	-	-	-	-	-	-	-	14,855	474,668
Shipments via tramway, other than deliveries to byproduct plants and to coke ovens and for smithing use	23,179	-	-	-	-	-	-	-	-	-	-	566,018
Shipments via conveyor belt, other than deliveries to byproduct plants and to coke ovens and for smithing use	-	-	-	17,930	7,752	23,534	-	1,494	-	-	-	2,995,330
Total Tonnage Shipped	15,505,136	1,497,994	8,337,369	2,000,323	4,869,372	213,288	8,234,256	5,580,056	2,162,933	3,829,155	1,014,796	474,915,709
Coal used by mine employees	95,432	3,431	9,426	15,834	24,878	2,682	33,593	14,358	82,770	9,324	11,035	2,325,531
Coal used to produce coal	82,745	4,229	14,434	32,875	76,140	7,929	103,741	15,898	2,559	5,545	13,318	2,083,165
Coal made into briquettes or packaged fuel at the reporting mine	-	-	-	-	-	-	-	-	24,494	-	-	180,874
Other disposals not specified above	-	-	473	-	-	-	-	111	-	-	-	18,816
Total Tons Shipped or Used	15,683,313	1,505,654	8,361,702	2,049,032	4,970,390	223,899	8,371,590	5,610,423	2,272,756	3,844,024	1,039,149	479,524,095
Net Change in Inventories	19,113	1,805	-5,513	1,440	1,366	-3,263	-483	22,976	147	-2,084	-45,395	112,112
Total Production Reported	15,702,426	1,507,459	8,356,189	2,050,472	4,971,756	220,636	8,371,107	5,633,399	2,272,903	3,841,940	993,754	479,636,207
Percent of Estimated Production	87.0	72.9	99.0	98.3	91.1	79.1	98.4	97.6	89.3	95.6	69.3	93.4

PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED JUNE 30, 1946
AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56
(In net tons of 2,000 pounds)

TABLE 6

(Includes mines with an average daily capacity of 50 tons or more and all mines, washeries, and preparation plants with rail or river connections)

District and Movement	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)		All Double Screened Coal with Top Size not exceeding 2" (2)		M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)		All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)		All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)		Total Columns 1 through 5 (6)		Size not reported (7)	Coal used at mines 1/ (8)	Net change in inventory (9)	Grand total Columns 6 through 9 (10)
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent				
District 1. Eastern Pennsylvania																
Total	2,088,169	5.0	1,780,926	4.2	30,030,409	71.4	2,438,076	5.8	5,722,653	13.6	42,060,233	100.0	79,445	554,927	-17,431	42,677,174
Truck	108,224	8.7	72,955	5.9	923,365	74.6	36,033	2.9	97,373	7.9	1,237,950	100.0	-			
Railroad fuel 2/	292,646	5.0	61,247	1.0	5,359,292	90.7	39,334	0.7	155,705	2.6	5,908,224	100.0	66			
Other	1,687,299	4.8	1,646,724	4.7	23,747,752	68.0	2,362,709	6.8	5,469,575	15.7	34,914,059	100.0	79,379			
District 2. Western Pennsylvania																
Total	6,847,886	10.8	2,581,007	4.0	47,297,313	74.3	5,288,630	8.3	1,634,088	2.6	63,648,924	100.0	101,577	364,782	69,785	64,185,068
Truck	1,440,596	39.0	332,339	9.0	1,116,058	30.1	627,318	17.0	181,877	4.9	3,698,188	100.0	18,502			
Railroad fuel 2/	1,104,403	11.0	169,103	1.7	8,300,801	82.4	434,736	4.3	64,572	0.6	10,073,615	100.0	10,138			
Other 3/	4,302,887	8.6	2,079,565	4.2	37,880,454	75.9	4,226,576	8.5	1,387,639	2.8	49,877,121	100.0	72,937			
District 3. Northern West Virginia 4/																
Total	2,317,853	6.1	6,633,153	17.4	22,237,293	58.3	2,766,604	7.3	4,135,766	10.9	38,090,669	100.0	1,360	105,595	-40,775	38,156,849
Truck	22,088	11.7	67,166	35.6	91,006	48.3	38	5/	8,212	4.4	188,510	100.0	-			
Railroad fuel 2/	449,876	3.9	2,129,743	18.2	8,908,586	76.1	120,524	1.0	95,907	0.8	11,704,636	100.0	-			
Other 3/	1,845,889	7.1	4,436,244	16.9	13,237,701	50.5	2,646,042	10.1	4,031,647	15.4	26,197,523	100.0	1,360			
District 4. Ohio																
Total	5,783,547	20.4	1,668,456	5.9	14,787,725	52.2	4,479,086	15.8	1,609,936	5.7	28,328,750	100.0	642,597	81,680	- 2,794	29,050,233
Truck	1,240,834	28.7	312,766	7.3	1,891,512	43.8	743,015	17.2	129,985	3.0	4,318,112	100.0	1,436			
Railroad fuel 2/	1,398,410	14.7	18,646	0.2	7,832,971	82.4	228,172	2.4	30,637	0.3	9,508,836	100.0	20,548			
Other	3,144,303	21.7	1,337,044	9.2	5,063,242	34.9	3,507,899	24.2	1,449,314	10.0	14,501,802	100.0	620,613			
District 5. Michigan																
Total	59,782	65.3	-	-	1,164	1.3	30,611	33.4	-	-	91,557	100.0	-	9,764	- 51	101,270
Truck	40,502	72.8	-	-	-	-	15,123	27.2	-	-	55,625	100.0	-			
Railroad fuel	699	93.8	-	-	-	-	46	6.2	-	-	745	100.0	-			
Other	18,581	52.8	-	-	1,164	3.3	15,442	43.9	-	-	35,187	100.0	-			
District 6. Panhandle																
Total	570,083	13.8	212,663	5.1	2,890,175	70.0	246,144	6.0	210,506	5.1	4,129,571	100.0	215	4,580	46	4,134,412
Truck	172,819	28.3	34,796	5.7	361,531	59.2	31,435	5.1	10,656	1.7	611,237	100.0	215			
Railroad fuel 2/	60,076	5.5	15,833	1.4	1,000,516	91.8	2,223	0.2	11,488	1.1	1,090,136	100.0	-			
Other	337,188	13.9	162,034	6.7	1,528,128	62.9	212,486	8.8	188,362	7.7	2,428,198	100.0	-			
District 7. Southern No. 1																
Total	9,388,988	19.6	4,250,205	8.9	15,904,824	33.3	4,311,367	9.0	13,977,546	29.2	47,832,930	100.0	215,563	733,104	107,706	48,889,303
Truck	112,274	67.2	34,156	20.4	15,722	9.4	103	0.1	4,894	2.9	167,149	100.0	-			
Railroad fuel 2/	39,466	5.4	19,123	2.6	555,393	75.2	49,476	6.7	74,619	10.1	738,077	100.0	47,368			
Other	9,237,248	19.7	4,196,926	8.9	15,333,709	32.7	4,261,788	9.1	13,898,033	29.6	46,927,704	100.0	168,195			
District 8. Southern No. 2																
Total	26,245,884	27.7	8,070,184	8.5	33,574,799	35.5	21,304,694	22.5	5,478,087	5.8	94,673,648	100.0	246,854	835,737	-24,707	95,731,532
Truck	597,258	64.7	71,054	7.7	196,006	21.3	42,446	4.6	15,965	1.7	922,729	100.0	17,227			
Railroad fuel 2/	968,892	7.8	243,439	2.0	9,365,964	75.6	1,689,869	13.7	113,512	0.9	12,381,676	100.0	31,301			
Other 3/	24,679,734	30.3	7,755,691	9.5	24,012,829	29.5	19,572,379	24.1	5,348,610	6.6	81,369,243	100.0	198,326			

TABLE 6

PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED JUNE 30, 1946
AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56 (Continued)

District and Movement	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)		All Double Screened Coal with Top Size not exceeding 2" (2)		M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)		All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)		All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)		Total Columns 1 through 5 (6)		Size not reported (7)	Coal used at mines 1/ (8)	Net change in inventory (9)	Grand total Columns 6 through 9 (10)
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent				
District 9. West Kentucky																
Total	4,136,948	25.9	1,048,435	6.6	7,520,308	47.2	2,866,793	18.0	364,770	2.3	15,937,254	100.0	24,201	76,475	10,749	16,048,679
Truck	452,009	77.0	24,427	4.2	36,045	6.1	62,849	10.7	11,560	2.0	586,890	100.0	-			
Railroad fuel 2/	979,186	15.2	44,820	0.7	5,240,565	81.4	124,100	1.9	54,814	0.8	6,443,485	100.0	-			
Other	2,705,753	30.4	979,188	11.0	2,243,698	25.2	2,679,844	30.0	298,396	3.4	8,906,879	100.0	24,201			
District 10. Illinois																
Total	20,333,206	32.1	3,336,253	5.3	14,656,169	23.2	21,788,214	34.4	3,177,658	5.0	63,291,500	100.0	9,450	997,039	19,227	64,317,216
Truck	2,803,221	51.3	692,178	12.7	61,996	1.1	1,722,959	31.6	178,648	3.3	5,459,002	100.0	4,474			
Railroad fuel 2/	9,041,805	43.3	246,108	1.2	9,725,428	46.5	1,799,604	8.6	89,327	0.4	20,902,272	100.0	-			
Other 3/	8,488,180	23.0	2,397,967	6.5	4,868,745	13.2	18,265,651	49.4	2,909,683	7.9	36,930,226	100.0	4,976			
District 11. Indiana																
Total	8,875,236	42.4	2,036,980	9.8	1,440,919	6.9	7,464,740	35.7	1,090,988	5.2	20,908,863	100.0	118,689	125,096	- 3,659	21,148,989
Truck	754,023	52.5	183,917	12.8	148,245	10.3	315,297	21.9	35,531	2.5	1,437,013	100.0	20,862			
Railroad fuel	5,540,935	77.4	82,319	1.2	1,240,931	17.3	293,808	4.1	-	-	7,157,993	100.0	3,502			
Other	2,580,278	20.9	1,770,744	14.4	51,743	0.4	6,855,635	55.7	1,055,457	8.6	12,313,857	100.0	94,325			
District 12. Iowa																
Total	459,552	36.8	58,398	4.7	40,977	3.3	685,522	55.0	2,375	0.2	1,246,824	100.0	8,589	14,121	3,907	1,273,441
Truck	218,086	52.6	26,073	6.3	30,947	7.5	136,441	33.0	2,375	0.6	413,922	100.0	4,035			
Railroad fuel	141,164	86.7	8,006	4.9	-	-	13,624	8.4	-	-	162,794	100.0	-			
Other	100,302	15.0	24,319	3.6	10,030	1.5	535,457	79.9	-	-	670,108	100.0	4,554			
District 13. Southeastern																
Total	1,478,684	9.5	326,462	2.1	6,494,964	42.0	6,033,160	39.0	1,142,969	7.4	15,476,239	100.0	28,897	178,177	19,113	15,702,426
Truck	186,304	50.4	12,166	3.3	140,183	37.9	17,874	4.8	13,109	3.6	369.636	100.0	100			
Railroad fuel	7,767	0.2	46	5/	3,363,653	98.2	55,433	1.6	-	-	3,426,899	100.0	-			
Other	1,284,613	11.0	314,250	2.7	2,991,128	25.6	5,959,853	51.0	1,129,860	9.7	11,679,704	100.0	28,797			
District 14. Arkansas and Oklahoma																
Total	791,912	55.1	91,181	6.3	282,657	19.7	141,842	9.9	130,154	9.0	1,437,746	100.0	60,248	7,660	1,805	1,507,459
Truck	8,815	74.1	441	3.7	2,644	22.2	-	-	-	-	11,900	100.0	-			
Railroad fuel	2,598	4.2	1,284	2.1	49,469	80.2	3,870	6.3	4,472	7.2	61,693	100.0	47,710			
Other	780,499	57.2	89,456	6.6	230,544	16.9	137,972	10.1	125,682	9.2	1,364,153	100.0	12,538			
District 15. Southwestern																
Total	3,525,116	42.3	587,999	7.1	6/1,658,258	19.9	2,545,656	30.6	9,584	0.1	8,326,613	100.0	11,229	23,860	- 5,513	8,356,189
Truck	462,015	59.3	56,105	7.2	6/ 125,335	16.1	127,186	16.3	8,939	1.1	779,580	100.0	4,015			
Railroad fuel	1,059,798	52.2	33,818	1.7	6/ 876,262	43.1	60,164	3.0	-	-	2,030,042	100.0	1,050			
Other	2,003,303	36.3	498,076	9.0	6/ 656,661	11.9	2,358,306	42.8	645	5/	5,516,991	100.0	6,164			
District 16. Northern Colorado																
Total	750,120	37.5	199,293	10.0	23,060	1.2	883,011	44.1	144,839	7.2	2,000,323	100.0	-	48,709	1,440	2,050,472
Truck	348,140	49.8	131,303	18.8	9,782	1.4	192,536	27.6	16,769	2.4	698,530	100.0	-			
Railroad fuel	41,568	65.4	-	-	-	-	21,998	34.6	-	-	63,566	100.0	-			
Other	360,412	29.1	67,990	5.5	13,278	1.1	668,477	54.0	128,070	10.3	1,238,227	100.0	-			
District 17. Southern Colorado																
Total	1,595,831	32.8	117,802	2.4	1,530,503	31.5	1,504,207	31.0	110,440	2.3	4,858,783	100.0	10,589	101,018	1,366	4,971,756
Truck	233,630	63.3	27,853	7.6	5,207	1.4	94,068	25.5	8,268	2.2	369,026	100.0	-			
Railroad fuel	48,185	3.1	14,328	0.9	1,260,603	80.2	236,514	15.0	12,365	0.8	1,571,995	100.0	-			
Other	1,314,016	45.0	75,621	2.6	264,693	9.1	1,173,625	40.2	89,807	3.1	2,917,762	100.0	10,589			

TABLE 6

PRODUCTION OF BITUMINOUS COAL AND LIGNITE BY CONSOLIDATED SIZE GROUPS DURING THE YEAR ENDED JUNE 30, 1946 AS REPORTED ON FORMS S.F.A. NOS. 38 AND 56 (Continued)

District and Movement	All Lump Coal and All Double Screened Coal with Top Size Over 2" (1)		All Double Screened Coal with Top Size not exceeding 2" (2)		M/R Mod. M/R Dom. M/R Screened and Altered M/R and Minus Resultant with Top Size Over 2" (3)		All Minus Resultant and Dedusted Screenings with Top Size Over 3/4" and not exceeding 2" (4)		All Minus Resultant and Dedusted Screenings with Top Size not exceeding 3/4" (5)		Total Columns 1 through 5 (6)		Size not reported (7)	Coal used at mines 1/	Net change in inventory (9)	Grand total Columns 6 through 9 (10)
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent				
District 18. New Mexico																
Total	117,403	55.1	19,796	9.3	5,145	2.4	61,503	28.8	9,441	4.4	213,288	100.0	-	10,611	- 3,263	220,636
Truck	18,067	73.2	4,432	18.0	2,152	8.7	17	0.1	-	-	24,668	100.0	-			
Railroad fuel	39,690	48.3	-	-	-	-	33,809	41.1	8,733	10.6	82,232	100.0	-			
Other	59,646	56.1	15,364	14.4	2,993	2.8	27,677	26.0	708	0.7	106,388	100.0	-			
District 19. Wyoming																
Total	1,199,337	14.6	166,183	2.0	5,398,426	65.6	1,460,881	17.7	9,429	0.1	8,234,256	100.0	-	137,334	- 483	8,371,107
Truck	62,503	78.5	8,649	10.9	1,024	1.3	6,091	7.6	1,400	1.7	79,667	100.0	-			
Railroad fuel	367,486	6.1	35,542	0.6	5,278,256	88.0	314,271	5.3	-	-	5,995,555	100.0	-			
Other	769,348	35.6	121,992	5.7	119,146	5.5	1,140,519	52.8	8,029	0.4	2,159,034	100.0	-			
District 20. Utah																
Total	1,882,905	33.7	202,189	3.6	1,806,243	32.4	1,623,460	29.1	64,544	1.2	5,579,341	100.0	826	30,256	22,976	5,633,399
Truck	110,798	73.3	334	0.2	119	0.1	39,893	26.4	-	-	151,144	100.0	715			
Railroad fuel	60,375	7.2	17,716	2.1	556,713	66.0	207,749	24.6	472	0.1	843,025	100.0	-			
Other	1,711,732	37.3	184,139	4.0	1,249,411	27.3	1,375,818	30.0	64,072	1.4	4,585,172	100.0	111			
District 21. North and South Dakota																
Total	897,905	41.5	213,290	9.9	6/ 652,634	30.2	7/ 399,104	18.4	8/ -	-	2,162,933	100.0	-	109,823	147	2,272,903
Truck	69,217	64.5	8,491	7.9	6/ 29,664	27.6	-	-	-	-	107,372	100.0	-			
Railroad fuel	16,922	13.7	1,761	1.4	6/ 63,214	51.2	7/ 41,693	33.7	8/ -	-	123,590	100.0	-			
Other	811,766	42.0	203,038	10.5	6/ 559,756	29.0	7/ 357,411	18.5	8/ -	-	1,931,971	100.0	-			
District 22. Montana																
Total	379,225	9.9	117,021	3.1	3,035,939	79.3	203,163	5.3	93,807	2.4	3,829,155	100.0	-	14,869	- 2,084	3,841,940
Truck	29,148	79.8	4,903	13.4	-	-	2,270	6.2	230	0.6	36,551	100.0	-			
Railroad fuel	18,460	0.6	191	5/	3,035,939	96.1	101,259	3.2	3,887	0.1	3,159,736	100.0	-			
Other	331,617	52.4	111,927	17.7	-	-	99,634	15.7	89,690	14.2	632,868	100.0	-			
District 23. Washington only																
Total	187,886	18.5	247,672	24.4	320,755	31.6	180,785	17.8	77,698	7.7	1,014,796	100.0	-	24,353	-45,395	993,754
Truck	105,045	44.7	122,131	51.9	573	0.2	5,037	2.1	2,512	1.1	235,298	100.0	-			
Railroad fuel	1,434	0.4	228	0.1	282,909	86.4	42,854	13.1	-	-	327,425	100.0	-			
Other 3/	81,407	18.0	125,313	27.7	37,273	8.3	132,894	29.4	75,186	16.6	452,073	100.0	-			
GRAND TOTAL	99,913,458	21.1	33,965,548	7.2	211,590,659	44.7	88,707,253	18.7	39,197,278	8.3	473,374,196	100.0	1,560,329	4,589,570	112,112	479,636,207
Truck	9,595,616	43.7	2,228,635	10.2	5,189,116	23.6	4,218,029	19.2	728,303	3.3	21,959,699	100.0	71,581			
Railroad fuel	21,681,841	20.9	3,143,301	3.0	72,297,465	69.7	5,915,130	5.7	720,510	0.7	103,758,247	100.0	161,683			
Other 3/	68,636,001	19.7	28,593,612	8.2	134,104,078	38.6	78,574,094	22.6	37,748,465	10.9	347,656,250	100.0	1,327,065			

1/ Includes coal used to produce coal, coal used by mine employees, and coal made into briquettes or packaged fuel at the reporting mine.
2/ Includes all methods of movement except tidewater and lake.
3/ Includes truck shipments to byproduct and beehive coke ovens away from the producing mine and for smithing use as follows: District 2, 731,350 tons; District 3, 15,078 tons; District 8, 8,625 tons; District 10, 27,872 tons; District 23, 3,397 tons.
4/ In the case of District 3, the tonnages shown in Column 1 represent lump coal and double screened coal with bottom size larger than 2". The tonnages shown in Column 2 represent lump coal and double screened coal with bottom size 2" and smaller.
5/ Less than one tenth of one percent.
6/ Includes some crushed lignite.
7/ Includes all screenings. Breakdown of size of screenings not reported.
8/ Included with "All minus resultant and dedusted screenings with top size over 3/4" and not exceeding 2"."

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

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For Release April 8, 1947

MINERAL MARKET REPORTS
NO. MMS 1506

ALUMINUM IN 1946

Aluminum producers, although earlier presumed to face a serious light-metal surplus, found a demand in 1946 that could not be met even by the output level of 600,000 short tons annually reached by the year end, according to the Bureau of Mines, United States Department of the Interior. The revival in production rate was confined to the latter part of the year; total production of primary aluminum in the United States in 1946 was 409,630 tons, a quantity which nonetheless was 2½ times greater than that turned out in any year prior to 1940.

During 1946 aluminum production increased from 46 to 92 percent of privately-operated capacity, or from 34 to 68 percent of total (including inoperative Government) capacity. Delay in resuming production on a scale commensurate with demand stemmed from problems in disposal of Government plants, shortages of electric power and soda ash, and some lack of those fabricating facilities required particularly for peace-time products. The allotment of soda ash to the aluminum industry was raised in October 1946, by an order of the Civilian Production Administration, from the former level of 60 percent to 85 percent of requirements.

The extraordinary demand for aluminum is partly attributive to shortages of other metals and lumber, but it is likely that such markets as are lost to aluminum will be more than compensated for by novel light-metal applications. Aluminum has surpassed lead in tonnage of primary metal produced in the United States and is exceeded in that respect only by zinc, copper, and iron. In terms of volume output, because of its low density, aluminum is by a substantial margin the number one non-ferrous metal.

Production. - Production of primary aluminum in the United States in 1946 was 409,630 short tons valued at $115,811,600—a decline of 17 percent in quantity compared with the output of 495,060 tons valued at $140,864,000 in the final war year 1945. The annual rate of production increased from 300,000 tons early in 1946 to 600,000 tons by the end of the year. The recovery of secondary aluminum in 1946 is estimated at 270,000 short tons, 10 percent less than the output of 298,387 tons in 1945.

Capacity. - Aluminum ingot capacity in the United States at the end of 1946 was 883,000 short tons--649,000 tons owned or leased by private companies and 234,000 tons inoperative and in Government hands. Of the private capacity, 51 percent is owned by the Aluminum Co. of America, 29 percent owned or leased by Reynolds Metals Co., and 20 percent owned or leased by Permanente Metals Corp. Of the Government capacity awaiting disposal, 23 percent at Massena (St. Lawrence), N. Y., has been bid on by the Aluminum Company of America, 14 percent at Los Angeles (Torrance), Calif., has

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Prepared by Allan F. Matthews and Mary E. Trought, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

been bid on by Asarco Aluminum Co., 15 percent at Jones Mills, Ark., is under option to lease by Reynolds Metals Co., and 25 and 23 percent at Los Angeles (Torrance), Calif., and Riverbank, Calif., respectively, await the possible advent of economic power supply. Government plants at Queens (Maspeth), N. Y., and Burlington, N. J., are not considered as part of available capacity because they have high power costs, are largely dismantled, and are unlikely to be used again for aluminum production.

Imports. - Imports for consumption of aluminum in 1946, according to the Department of Commerce, were as follows: 41,487 short tons of metal and alloys (crude) valued at $9,986,327; 1,119 tons of plates, sheets, bars, etc. valued at $483,474; and 14,493 tons of scrap valued at $1,766,298. The entire supply of metal and alloys (crude) came from Canada, except for 56 tons valued at $9,240 from the United Kingdom. The United Kingdom and Canada also furnished the bulk of the imported shapes and scrap; 10 percent of the scrap entries was from Italy.

Exports. - The quantities of aluminum exported in 1946, according to the Department of Commerce, were as follows: 1,107 short tons of ingot, slabs, and crude; 15,402 tons of plates and sheets; 184 tons of rods and bars; and 640 tons of scrap.

Consumption. - Apparent consumption of primary aluminum was 461,877 short tons in 1946 compared with 797,220 tons in the final war year 1945.

Stocks. - Primary producers' stocks of aluminum decreased from 41,056 short tons at the beginning of 1946 to 14,722 tons at the end of the year, due primarily to a demand for the metal that exceeded production. The Office of Metals Reserve had 185,750 tons of primary aluminum (173,857 stored in the United States and 11,893 in Canada) and 3,112 tons of secondary metal in stock on January 1, 1946, compared with 71,760 tons of primary (all in the United States) and 1,332 tons of secondary on December 31, 1946.

Price. - The average value of primary aluminum shipped in 1946 was 14.1 cents a pound compared with 14.3 cents in 1945 and 1944. Quoted prices for virgin ingot remained at 15 cents a pound and for pig aluminum at 14 cents throughout 1945. Aluminum and magnesium are the only metals produced on a large scale that were cheaper in price during 1946 than before the war. Aluminum became cheaper than copper, pound for pound, for the first time in November 1946.

World Production. - Early reports indicate that approximately 750,000 metric tons of primary aluminum were produced by all countries in 1946 compared with 900,000 tons in 1945. Of the 1946 output, about 50 percent was in the United States, 20 percent in Canada, 10 percent in Russia, 8 percent in France, 5 percent in United Kingdom, and 7 percent in other countries. The decline in world production in 1946 was due primarily to the termination of war and to the prohibition on the output of primary aluminum in Germany and Japan.

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FOR RELEASE APRIL 25, 1947.

MINERAL MARKET REPORTS
M. M. S. NO. 1508.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

FLUORSPAR INDUSTRY IN 1946

Fluorspar production, shipments, and consumption in the United States in 1946, although smaller than during the years of World War II, were greater than in any year of World War I, according to the Bureau of Mines, United States Department of the Interior. The smaller output and shipments were caused largely by lessened demand. Also contributing to the loss were the coal strikes, which caused some fluorspar mines and mills to curtail or suspend operations, and a prolonged strike at one of the largest fluorspar producing mines.

Production of finished fluorspar from domestic ore was 277,300 short tons in 1946 compared with 325,200 tons in 1945. Output of metallurgical-grade and acid-grade fluorspar was ample for requirements throughout 1946 but ceramic grade was in short supply during some periods.

Shipments of fluorspar from mines were 277,940 short tons in 1946 compared with 323,961 tons in 1945. Illinois maintained its rank as the chief producing State in 1946 by supplying 56 percent of the total shipments. Illinois and New Mexico were the only producing States to record increases in shipments in 1946. Shipments by river or river-rail were 51,428 tons in 1946 compared with 52,718 tons in 1945.

Consumption of fluorspar declined to 303,190 short tons in 1946 from 356,090 tons in 1945. The steel industry continued to be the principal consumer of fluorspar and accounted for 53 percent of the total in 1946. The average consumption of fluorspar per ton of basic open-hearth steel declined for the fourth consecutive year; it was 5.4 pounds in 1946 compared with 5.5 pounds in 1945. Consumption of fluorspar in the manufacture of hydrofluoric acid, the second largest user, also declined. Lessened consumption of fluorspar at steel and hydrofluoric acid plants was offset partly by gains in usage at glass and enamel plants. Use of fluorspar by manufacturers of glass established an all-time high in 1946.

Fluorspar was reported consumed in 38 States and the District of Columbia in 1946, but 3 States - Illinois, Ohio, and Pennsylvania - used 166,465 tons or 55 percent of the total consumption. Pennsylvania was again the chief consuming State; it ranked first in consumption of fluorspar in both steel and glass but dropped from second to fourth place in hydrofluoric acid. Illinois maintained its rank as the largest consumer of fluorspar in hydrofluoric acid in 1946.

Prepared by Hubert W. Davis and Gertrude N. Greenspoon under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Fluorspar imported for consumption in the United States was 29,852 short tons in 1946 compared with 103,133 tons in 1945.

Stocks of fluorspar at consumers' plants were 98,663 short tons on December 31, 1946, a loss of 4 percent from those at the end of 1945. Stocks of finished fluorspar at mines were 18,957 tons, a decline of 5 percent from those at the end of 1945.

Fluorspar shipped from mines in the United States, 1945-46, by States

State	1945			1946		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Arizona	1,126	$21,016	$18.66	389	$7,959	$20.46
Colorado	52,437	1,333,735	25.43	32,539	925,867	28.45
Illinois	147,251	5,014,807	34.06	154,525	5,493,642	35.55
Kentucky	95,142	2,832,945	29.78	63,143	1,889,454	29.92
New Mexico	14,449	390,331	27.01	17,584	489,607	27.84
Nevada	7,038	304,045	22.43	6,234	232,440	23.82
Texas	3,413			1,118		
Utah	2,973			2,370		
Washington	132			38		
	323,961	9,896,879	30.55	277,940	9,038,969	32.52

Fluorspar shipped from mines in the United States, 1945-46, by uses

Use	1945			1946		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Steel	186,073	$5,182,059	$27.85	134,295	$3,843,038	$28.62
Iron foundry	3,422	94,852	27.72	4,855	137,507	28.32
Glass	32,300	1,033,737	32.00	39,837	1,306,005	32.78
Enamel	3,660	128,612	35.14	7,540	262,530	34.82
Hydrofluoric acid	80,155	2,896,267	36.13	79,047	3,111,291	39.36
Miscellaneous	7,482	254,560	34.02	6,730	221,001	32.84
Government stock pile	9,449	260,853	27.61	3,907	93,800	24.01
Foreign consumption	1,420	45,939	32.35	1,729	63,797	36.90
	323,961	9,896,879	30.55	277,940	9,038,969	32.52

Fluorspar shipped from mines in the United States, 1945-1946, by grades and industries, in short tons

Grade and industry	1945	1946
Fluxing gravel and foundry lump:		
Ferrous	1/184,645	1/134,822
Nonferrous	1,170	1,410
Cement	326	661
Miscellaneous	158	175
Government stock pile	7,225	3,907
	1/193,524	1/140,975
Acid lump:		
Ferrous	36	15
Nonferrous	2	2
Hydrofluoric acid	593	267
	631	284
Ground and flotation concentrates:		
Ferrous	2/3/ 6,791	2/3/ 5,939
Nonferrous	2,211	2,231
Glass and enamel	35,960	47,377
Hydrofluoric acid	79,562	78,780
Miscellaneous	1,638	625
Government stock pile	2,224	......
Exported	1,420	1,729
	3/129,806	3/136,681
Total:		
Ferrous	191,472	140,776
Nonferrous	3,383	3,643
Cement	326	661
Glass and enamel	35,960	47,377
Hydrofluoric acid	80,155	79,047
Miscellaneous	1,796	800
Government stock pile	9,449	3,907
Exported	1,420	1,729
	323,961	277,940

1/ Includes 4,182 and 9,129 tons, respectively, of flotation concentrates, which were blended with fluxing gravel in 1945 and 1946.

2/ Includes pelletized gravel.

3/ Excludes 4,182 and 9,129 tons, respectively, of flotation concentrates, which were blended with fluxing gravel in 1945 and 1946.

Fluorspar (domestic and foreign) consumed in the United States, 1945-46, by States, in short tons

State	1945	1946	State	1945	1946
Alabama	9,177	7,101	Kentucky	7,381	5,858
Georgia			Maryland		
Arkansas	3,894	16,491	Maine	1,294	1,346
Louisiana			Massachusetts		
Mississippi			Rhode Island		
North Carolina			Michigan	9,168	8,052
Florida		......	Minnesota	1,507	1,632
California	10,416	6,755	Wisconsin		
Colorado	11,460	8,184	Missouri	2,577	2,197
Iowa			New York	16,386	12,625
Utah			Ohio	59,232	46,493
Connecticut	497	420	Oklahoma	3,571	805
Delaware	31,314	25,361	Oregon	1,692	1,501
District of Columbia			Washington		
New Jersey			Pennsylvania	85,996	70,661
Illinois	54,397	49,311	Tennessee	1,491	1,856
Indiana	27,355	26,435	Texas	11,042	4,572
Kansas	141	166	Virginia	157	94
Nebraska			West Virginia	5,945	5,274
Wyoming					
South Dakota	......			356,090	303,190

Fluorspar (domestic and foreign) consumed and in stock in the United States, 1945-1946, by industries, in short tons

Industry	1945			1946		
	Consumption	Stocks at consumers' plants Dec. 31	In transit to consumers' plants Dec. 31	Consumption	Stocks at consumers' plants Dec. 31	In transit to consumers' plants Dec. 31
Basic open-hearth steel	176,488	67,800	5,871	145,631	65,341	3,005
Electric-furnace steel	20,873			14,898		
Bessemer steel	555			220		
Iron foundry	3,877	1,082	51	4,925	1,165	66
Ferro-alloys	2,909	1,013	.....	2,044	927	.....
Hydrofluoric acid	109,315	20,757	506	83,901	17,431	1,810
Primary aluminum	1,190	665	.....	1,417	1,182	.....
Primary magnesium	811	757	.....			
Glass	31,874	5,962	681	39,852	7,136	1,414
Enamel	3,695	1,433	101	6,739	1,946	283
Welding rod	1.457	257	.....	417	181	.....
Cement	365	1,214	.....	608	1,262	.....
Miscellaneous	2,681	2,208	12	2,538	2,092	125
	356,090	103,148	7,222	303,190	98,663	6,703

Fluorspar imported for consumption in the United States, 1945-46, by countries
(Source: U. S. Department of Commerce)

Country	1945		1946	
	Short tons	Value	Short tons	Value
Canada..................	1/ 2,361	1/ $75,085	310	$8,934
Mexico..................	62,575	1,054,692	24,063	384,757
Newfoundland............	1/ 10,875	1/ 332,556	2,688	80,640
Spain...................	27,322	694,125	2,791	82,484
	103,133	2,156,458	29,852	516,815

1/ Bureau of Mines has determined that 1,691 tons valued at $56,918 credited to Canada by the U. S. Department of Commerce, originated in Newfoundland.

Imported fluorspar delivered to consumers in the United States, 1945-46, by uses

Use	1945			1946		
	Short tons	Selling price at tidewater, border, or f.o.b. flotation mill in United States, including duty		Short tons	Selling price at tidewater, border, or f.o.b. flotation mill in United States, including duty	
		Total	Average		Total	Average
Steel...........	21,027	$555,530	$26.42	20,319	$485,592	$23.90
Hydrofluoric acid.........	22,579	811,025	35.92	5,143	163,659	31.82
Magnesium......	60	2,100	35.00	......	....	.....
Ferro-alloys...	193	5,769	29.89	309	10,700	34.63
Glass and enamel........	548	18,110	33.05	106	3,384	31.92
Other..........	125	4,625	37.00	186	4,238	22.78
	44,532	1,397,159	31.37	26,063	667,573	25.61

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FOR RELEASE MAY 19, 1947.

MINERAL MARKET REPORT
MMS NO. 1509

SLATE INDUSTRY IN 1946, ANNUAL FIGURES

Paralleling the high level of private residential construction and a record private nonresidential building program, sales of slate in 1946 totaled 759,770 short tons valued at $8,844,106, according to figures compiled by the Bureau of Mines, Department of the Interior, from reports furnished by producers, 4 percent higher in quantity than the former peak of 727,700 tons in 1924. Compared with 1945 figures (551,890 tons valued at $5,658,913), total sales in 1946 increased 38 percent in quantity and 56 percent in value. Slate sold as dimension stone, - roofing slate, mill stock, and flagging, - rose in 1946 to 96,250 short tons valued at $3,419,502, or 38 percent greater in quantity and 73 percent higher in value than the 69,660 tons valued at $1,971,740 reported in 1945.

Sales of roofing slate in 1946 amounted to 146,790 squares valued at $1,982,928, the highest level since 1942, 45 percent in quantity and 103 percent in value higher than in 1945, indicating a rapid recovery from the low point of 1944. The average value per square in 1946 was $13.51, 40 percent higher than that reported in 1945 ($9.64). All areas producing roofing slate showed substantial gains in 1946 compared with 1945. Sales in Pennsylvania in 1946 (113,490 squares valued at $1,401,427) were 49 percent and 99 percent greater in quantity and value, respectively, than in 1945. Total sales in Vermont and Maine were 25 percent higher in quantity and 104 percent in value than those reported for New York, Vermont and Maine in 1945. Sales in the Buckingham district, Virginia, also registered large increases in quantity and value in 1946 compared with 1945.

The stepped-up construction activity, particularly in nonresidential building, as well as the installation of indoor recreational facilities was reflected directly in the enhanced demand for slate sold as mill stock. Total sales under this classification, which includes slate sold for electrical use, structural and sanitary purposes, and as blackboards and bulletin boards, billiard-table tops, school slates and grave vaults and covers, increased in 1946 to 2,371,820 square feet valued at $1,032,584, or 13 percent in quantity and 39 percent in value greater than in 1945. Blackboards and bulletin boards, structural and sanitary slate and billiard-table tops showed very large gains in 1946 compared with 1945, particularly billiard-table tops (85 and 140 percent in quantity and value, respectively). Sales of electrical slate were 7 percent higher than in 1945. Grave vaults and covers declined more than 50 percent and the quantity of school slates sold decreased slightly.

Sales of slate for flagging, which includes slate used as walkways, stepping stones and small amounts for miscellaneous uses, in 1946 reached a new high of 4,322,220 square feet valued at $403,990, surpassing the previous record quantity, set in 1941, by 44 percent and the former record value, in 1945, by 60 percent.

Prepared by Robert W. Metcalf and M. G. Downey under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch.

Sales of slate granules and flour in 1946 were the highest on record, rising to 663,520 short tons valued at $5,424,604, 38 percent higher in quantity and 47 percent higher in value than in 1945. The average value of granules in 1946 rose 64 cents per ton and that of flour 22 cents per ton compared with 1945.

The accompanying table presents the principal statistical data on production of slate in the United States in 1945 and 1946.

Salient statistics of the slate industry in the United States, 1945-46

	1945			1946				
	Quantity			Quantity			Percent of Change in	
	Unit of measurement	Approximate equivalent short tons	Value	Unit of measurement	Approximate equivalent short tons	Value	Quantity (Unit as reported)	Value
Domestic production (sales by producers):	Squares			Squares				
Roofing slate.......	101,300	38,240	$976,122	146,790	56,240	$1,982,928	+44.9	+103.1
Mill stock:	Sq. ft.			Sq. ft.				
Electrical slate......	363,210	3,100	283,650	389,210	2,760	366,039	+7.2	+29.0
Structural and sanitary slate......	314,200	2,480	135,671	448,520	3,530	222,675	+42.7	+64.1
Grave vaults and covers.	314,710	2,850	88,146	145,910	1,330	58,671	-53.6	-33.4
Blackboards and bulletin boards.....	649,510	1,650	170,392	808,710	2,090	240,520	+24.5	+41.2
Billiard-table tops.	158,580	1,160	56,453	292,740	2,180	135,217	+84.6	+139.5
School slates	1/307,570	280	8,033	1/286,730	260	9,462	-6.8	+17.8
Total mill stock.....	2,107,780	11,520	742,345	2,371,820	12,150	1,032,584	+12.5	+39.1
Flagstones, etc. 2/....	2,995,670	19,990	253,273	4,322,220	27,860	403,990	+44.3	+59.5
Total slate as dimension stone.......	---------	69,660	1,971,740	---------	96,250	3,419,502	+38.2	+73.4
Granules and flour.......	---------	482,230	3,687,173	---------	663,520	5,424,604	+37.6	+47.1
Grand total domestic production..	---------	551,890	5,658,913	---------	759,770	8,844,106	+37.7	+56.3

1/ Square feet, approximate. Number of pieces: 1945, 353,400; 1946, 535,950.

2/ Includes slate used for walkways, stepping stones, and miscellaneous uses.

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For Release May 16, 1947.

MINERAL MARKET REPORT
MMS. NO. 1510

BENTONITE SHIPMENTS INCREASED IN 1946

Shipments of bentonite increased 5 percent over 1945, according to reports from producers to the Bureau of Mines, United States Department of the Interior, and were the highest on record. Evelen States reported output of bentonite during 1946, compared with 9 States during 1945.

The major markets for bentonite, the foundry and petroleum industries, consumed nearly nine-tenths of the total tonnage. Rotary drilling mud consumed 38 percent; foundry sand bond, 27 percent; filtering and decolorizing oils, 24 percent, and the remainder, 11 percent, in a wide variety of uses. Sales for rotary drilling mud increased 42 percent over 1945; foundry sand bond increased 2 percent; oil filtering and decolorizing decreased slightly.

As in 1945, the Wyoming-South Dakota area furnished 66 percent of the total; 35 percent was produced in Wyoming, and 31 percent in South Dakota. Texas furnished 4 percent, and the remainder came from Mississippi, Arizona, Montana, California, Utah, Colorado, Nevada, and Oklahoma.

Bentonite sold or used by producers in the United States, 1945-46, by States

	1945		1946	
	Short tons	Value	Short tons	Value
Arizona.............	(1)	(1)	(1)	(1)
California...........	16,187	$145,424	(1)	(1)
Colorado............	(1)	(1)	(1)	(1)
Mississippi..........	(1)	(1)	(1)	(1)
Montana.............	(1)	(1)	(1)	(1)
Nevada..............	....	....	(1)	(1)
Oklahoma............	....	....	(1)	(1)
South Dakota........	178,374	1,202,555	186,707	$1,394,378
Texas...............	24,503	247,940	21,576	192,891
Utah................	(1)	(1)	(1)	(1)
Wyoming.............	199,293	1,686,912	212,530	1,988,918
Undistributed 2/.....	155,641	487,794	180,615	785,227
	573,998	3,770,625	601,428	4,361,414

1/ Included under "Undistributed." 2/ Figures include States indicated by "(1)".

Prepared by A. Linn, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
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J. A. KRUG, Secretary R. R. SAYERS, Director

For Release May 12, 1947.

MINERAL MARKET REPORT
MMS NO. 1511.

PHOSPHATE ROCK INDUSTRY OF THE WESTERN STATES - IDAHO, MONTANA, UTAH AND WYOMING - IN 1946.

New high records both for quantity and value of marketed production highlighted the Western States phosphate rock industry in 1946, as reported by producers to the Bureau of Mines, U. S. Department of the Interior. Marketed production jumped from 274,198 long tons in 1945 to 492,602 tons in 1946, an increase of 80 percent. The value nearly doubled - rising from $1,589,915 in 1945 to $3,012,157 in 1946. The output in 1946 came from Idaho, Montana, and Utah; Wyoming was inactive.

A record marketed production of Idaho phosphate rock in 1946 (312,658 long tons) - more than double the previous record made in 1945 (123,340 tons) made that State the leading producer in the Western region. There were only two companies in Idaho reporting sales of phosphate rock in 1946. The larger producer, the San Francisco Chemical Company, 216 Pine St., San Francisco 4, Calif., operated its Waterloo Mine, near Montpelier, Bear Lake County, Idaho, during 1946, selling the rock produced both in the export and domestic markets, but not consuming any of its production in its own California plant. The other company - the Anaconda Copper Mining Co., - operated its mine at Conda, Caribou County, Idaho. The shipments went largely, as in prior years, to the company's plant at Anaconda, Montana, for conversion to superphosphate and phosphate chemicals. A considerable quantity was sold to other domestic consumers. None was exported. The Simplot Fertilizer Company, Pocatello, Idaho, produced a large quantity of phosphate rock from its Fort Hall mine in Bingham County, near Fort Hall, but retained it in stock, using purchased material for its superphosphate operations. The Teton Phosphate Company, Montpelier, Idaho, made no shipments in 1946, and did only development work at its mine near Montpelier during the year.

Montana, the leading phosphate rock producer of the Western States for several years, dropped to second place in 1946. Its marketed production in that year - 179,944 long tons - exceeded that of 1945 - 150,858 tons -, however. Shipments were made by three companies. The Montana Phosphate Products Co., of Trail, British Columbia, the largest producer in Montana, operated its Anderson, Anaconda, and Graveley mines as well as several Government leases in the Garrison district, Montana. Most of the mined product was exported to the plant of the parent company, the Consolidated Mining and Smelting Co., of Canada, Ltd., at Trail. Only a small quantity was sold in the United States. The Manganese Products, Inc., 4260 West Marginal Way, Seattle 6, Washington, shipped a small quantity of phosphate rock from the Philipsburg district, Montana, in 1946. Lee H. Skeels, trustee and leasee of the Soluble Phosphates, Ltd., Maxville, Granite County, Montana, mined a small tonnage at a mine near Maxville, and shipped the product for direct application to the soil. The Moonlight Mining Co., Maxville, Montana, operating a property near

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Prepared by Bertrand L. Johnson and E. M. Tucker, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics & Statistics Branch.

Princeton, Montana, is reported to have made a small shipment of phosphate rock in 1946. The International Minerals & Chemical Corporation mined on its property in the Douglas Creek area, Granite County, Montana, for about two months in 1946, but did not ship any phosphate rock from its lease during the year.

Phosphate rock operations in Utah in 1946 were confined to those of the Garfield Chemical and Manufacturing Corporation, Salt Lake City, Utah, which mined and shipped phosphate rock from a Federal lease near Springville, Utah County, for use in iron blast furnaces.

No phosphate rock was produced in Wyoming in 1946, nor were any mining operations in progress on the John M. Thomas and the John M. Thomas and Walker - Doerr Phosphate Company leases in the Sublette Ridge phosphate rock field in southwestern Wyoming.

The average value per ton of the Western States phosphate rock sold or used, as reported by producers to the Bureau of Mines, increased again in 1946 - rising from $5.80 per ton in 1945 to $6.11 per ton in 1946. Increases were recorded in both Idaho and Montana, a 64-cent rise occurring in Montana.

Western States phosphate rock sold or used by producers, 1942-46.

Year	Idaho			Montana		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1942	114,079	$511,249	$4.48	150,402	$572,464	$3.81
1943	108,916	561,630	5.16	119,764	488,665	4.08
1944	112,565	584,400	5.19	186,434	761,745	4.09
1945	123,340	673,627	5.46	150,858	916,288	6.07
1946	1/312,658	1/1,805,103	1/5.77	179,944	1,207,054	6.71

Year	Utah			Total		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1942	1,184	$7,410	$6.26	265,665	$1,091,123	$4.11
1943	-----	-----	-----	228,680	1,050,295	4.59
1944	-----	-----	-----	298,999	1,346,145	4.50
1945	-----	-----	-----	274,198	1,589,915	5.80
1946	2/	2/	2/	492,602	3,012,157	6.11

1/ Includes a few thousand tons produced in Utah.

2/ Included under Idaho.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

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For Release MAY 16, 1947.

MINERAL MARKET REPORT
MMS. NO. 1512

DOMESTIC BALL CLAY SALES TOP PREVIOUS RECORD

Sales of ball clay in 1946, reported to the Bureau of Mines, United States Department of the Interior, were 39 percent higher than in 1945, and established a new record, exceeding the 1941 record by 23 percent. Tennessee contributed 54 percent of the total; Kentucky was second with 41 percent; and the balance, 5 percent, came from Maryland and New Jersey.

Eighty-nine percent of the shipments of domestic ball clay in 1946 were used in white pottery or cream-color ware, 7 percent in high-grade tile, and the remaining 4 percent in a variety of products--including kiln furniture, architectural terra cotta, artificial abrasives, and glass refractories.

Prices of domestic ball clay quoted in trade journals remained unchanged. These prices ranged from $3 to $18.25, depending upon quality and degree of preparation. The average value reported by producers to the Bureau of Mines increased from $9.11 in 1945 to $9.85 in 1946, per short ton.

Ball clay sold by producers in the United States, 1944-46, by States

State	1944		1945		1946	
	Short tons	Value	Short tons	Value	Short tons	Value
Kentucky........	72,729	$669,419	80,077	$744,599	98,918	$990,301
Maryland........	(1)	(1)	(1)	(1)	(1)	(1)
New Jersey.......	(1)	(1)	(1)	(1)	(1)	(1)
Tennessee........	73,339	624,297	82,835	752,289	131,689	1,299,393
Undistributed 2/.	9,599	82,380	11,612	92,987	12,538	106,208
	155,667	1,376,096	174,524	1,589,875	243,145	2,395,902

1/ Included under "Undistributed". 2/ Includes States indicated by "(1)" above.

Prepared by A. Linn, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division; Economics and Statistics Branch.

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For Release May 16, 1947.

MINERAL MARKET REPORT
MMS NO. 1513

FULLER'S EARTH OUTPUT IN 1946 SLIGHTLY ABOVE 1945

Sales of Fuller's Earth in the United States in 1946 were slightly above 1945, according to reports of producers to the Bureau of Mines, United States Department of the Interior. The output of 298,752 tons, while 11 percent below the record of 335,644 tons set in 1930, was 14 percent higher than the 1925-29 average of 261,640 tons.

Sales for mineral oil refining increased 5 percent; decreases were reported in all other major uses. Producers reported that 68 percent of the total tonnage was consumed in mineral oil refining; 16 percent in absorbent uses; 8 percent in vegetable oils; 3 percent in rotary drilling mud; and the remainder in insecticides, binder, and other various uses.

Increases in output were reported from Florida, Georgia, and Texas. The Georgia-Florida district produced 48 percent of the total tonnage; Texas, which reported the largest output of any State, furnished 37 percent of the total. The average value rose from $11.69 in 1945 to $12.39 in 1946.

Fuller's earth sold or used by producers in the United States, 1944-46, by States

	1944		1945		1946	
	Sh. tons	Value	Sh. tons	Value	Sh. tons	Value
Florida and Georgia..	128,654	$1,833,682	134,401	$1,939,035	144,214	$2,100,652
Illinois............	42,277	390,346	43,664	403,084	33,134	296,637
Texas...............	111,212	916,159	103,076	931,878	110,693	1,157,892
Other States 1/......	12,594	156,877	15,227	189,916	10,711	147.812
	294,737	3,297,064	296,368	3,463,913	298,752	3,702,993

1/ Includes California, Nevada, Tennessee, and Utah.

Prepared by A. Linn under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division; Economics and Statistics Branch.

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UNITED STATES DEPARTMENT OF THE INTERIOR

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For Release May 12, 1947.

MINERAL MARKET REPORT
MMS NO. 1514.

ROOFING GRANULES IN 1946

Production of roofing granules established a record of 1,380,560 tons in 1946, according to reports of producers to the Bureau of Mines, United States Department of the Interior. The tonnage was 32 percent greater than in 1945. The boom in new construction and repair of run-down property during the past year combined to increase demand for granule-coated asphalt roofing and siding to the highest levels on record. Relief of the wartime shortages of pigments and other raw materials benefitted the artificially colored types, but demand for natural granules also was high. Output of artificially colored granules increased 40 percent and natural 26 percent, whereas brick declined 11 percent. The average value of artificially colored granules increased from $14.52 in 1945 to $14.74 in 1946, natural from $7.39 to $7.75, and brick from $15.48 to $15.85.

Production of Roofing Granules in the United States in 1942-46

Year	Natural		Artificially colored	
	Short tons	Value	Short tons	Value
1942	352,320	$2,650,503	538,310	$7,594,174
1943	287,090	2,190,143	543,870	7,745,452
1944	287,084	2,210,379	637,089	9,313,356
1945	355,840	2,628,052	628,220	9,124,891
1946	447,910	3,470,411	877,990	12,939,512

Year	Brick		Total	
	Short tons	Value	Short tons	Value
1942	43,230	$636,961	933,860	$10,881,638
1943	47,650	716,685	878,610	10,652,280
1944	65,827	1,005,964	990,000	12,529,699
1945	61,220	947,637	1,045,280	12,700,580
1946	54,660	866,174	1,380,560	17,276,097

Prepared by N. C. Jensen, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch.

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MINERAL MARKET REPORTS
M. M. S. NO. 1515.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

TUNGSTEN IN 1946

Domestic production, shipments, and consumption of tungsten concentrates continued their downward trend in 1946, declining for the third successive year, but imports for consumption were greater than in 1945, according to the Bureau of Mines, United States Department of the Interior.

Output of tungsten concentrates in the first quarter of 1946, which was above the quarterly average in 1945, was greater, however, than the domestic consumption rate in the first quarter of 1946. As a result of the downward adjustment in operating schedules at the larger mines and treatment plants to conform to the lessened demand, output of tungsten concentrates declined progressively through the following three quarters of the year and by the year-end production at some mines was suspended. Production of tungsten concentrates declined to 4,908 short tons (60 percent WO_3 basis) in 1946 compared with 5,662 tons (revised figure) in 1945, but in 1946 it was equivalent to 72 percent of United States consumption. Shipments of tungsten concentrates were 5,193 short tons (60 percent WO_3 basis) in 1946 compared with 5,534 tons (revised figure) in 1945. Included in the 1946 figures is a substantial quantity of low-grade concentrates which were excluded from the quarterly statistics. A substantial part of the 1946 output, which was for the Government stock pile, was accounted for by the Government-owned Salt Lake City chemical plant, which discontinued operations in the third quarter.

Consumption of tungsten concentrates was at a rate of about 1,450 short tons (60 percent WO_3) during the first three quarters of 1946. In the fourth quarter, however, there was a sharp gain in usage over preceding quarters, owing largely to a swing back to "18-4-1" type (18 percent tungsten, 4 percent chromium, and 1 percent vanadium) of high-speed steel for the tool requirements of some companies which recently had been using "6-6" (6 percent tungsten and 6 percent molybdenum) or molybdenum-type high-speed steel. Also contributing to the fourth-quarter gain was the inception of operation at the refinery of United States Vanadium Corp. at Henderson, Nev. At this plant concentrates containing 8 to 50 percent WO_3 are processed chiefly to tungstic acid, ammonium paratungstate, and phosphotungstic acid. Notwithstanding the fourth-quarter betterment, consumption of tungsten concentrates was only 6,800 short tons (60 percent WO_3) in 1946 - 54-percent drop from 1945.

General imports of tungsten ore and concentrates in the United States were 7,160 short tons (60 percent WO_3) in 1946 compared with 9,078 tons in 1945. These quantities represent the ore and concentrates received in the United States irrespective of ultimate disposition; the bulk of these imports enters bonded warehouses.

Prepared by Hubert W. Davis under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Imports of tungsten ore and concentrates for consumption in the United States were 7,218 short tons (60 percent WO_3 basis) in 1946 compared with 5,016 tons in 1945. Bolivia (37 percent) and Brazil (26 percent) were the chief sources of the imports in 1946. These quantities represent ore and concentrates on which the duty has been paid and which have thereby entered into the commerce of the country. In addition, 1,724 tons (60 percent WO_3) were withdrawn from warehouses for smelting, refining, and export during 1946 (348 tons in 1945), and 1,517 tons (gross weight) were re-exported (461 tons in 1945). Ore and concentrates withdrawn from warehouses for smelting, refining, and export, and for re-export are free of duty. Exports of domestic tungsten concentrates were 39 short tons (gross weight) in 1946 (2 tons in 1945).

Tungsten concentrates produced and shipped in the United States, 1945-46, by States 1/

State	Produced				Shipped from mines			
	1945		1946		1945		1946	
	Short tons, 60 percent WO_3	Units	Short tons, 60 percent WO_3	Units	Short tons, 60 percent WO_3	Units	Short tons, 60 percent WO_3	Units
Alaska	- - - -	- - - -	26	1,583	- - - -	- - - -	19	1,129
Arizona	97	5,848	20	1,211	97	5,848	20	1,211
California	1,049	62,951	1,258	75,467	1,073	64,380	1,262	75,735
Colorado	252	15,136	208	12,473	234	14,022	213	12,754
Idaho	2,029	121,702	538	32,310	2,130	127,787	641	38,458
Montana	2/ 28	2/1,688	55	3,306	(3)	4	84	5,047
Nevada	2/2,059	2/123,532	2,475	148,483	2/1,857	2/111,431	2,617	157,069
North Carolina	139	8,314	298	17,908	132	7,914	307	18,434
South Dakota	3	189	1	39	4	226	1	39
Texas	- - - -	- - - -	1	45	- - - -	- - - -	1	45
Utah	5	319	27	1,636	5	319	27	1,636
Washington	1	69	1	30	2	125	1	30
	2/5,662	2/339,748	4,908	294,491	2/5,534	2/332,056	5,193	311,857

1/ Excludes secondary concentrates produced as feed for chemical treatment plants at Salt Lake City, Utah, and Bishop, Calif. Instead, the primary concentrates produced therefrom, as well as shipped, are included. The figures for 1946, however, include the secondary concentrates produced and shipped to the refinery at Henderson, Nev.

2/ Revised figures.

3/ 147 pounds.

Tungsten ore and concentrates imported into the United States, 1945-46, by countries
(Source: U. S. Department of Commerce)

Country	General imports: Gross weight (pounds)	General imports: Tungsten content (pounds)	Imports for consumption: Gross weight (pounds)	Imports for consumption: Tungsten content (pounds)	Imports for consumption: Value
1945					
Argentina	1,606,326	851,968	1,439,885	764,391	$901,159
Australia	49,177	21,333	....	......	....
Belgian Congo	304,036	156,726	51,941	27,858	25,787
Bolivia	8,976,072	3,959,432	5,582,594	2,450,771	2,269,888
Brazil	4,389,719	2,298,528	2,367,507	1,316,584	1,186,931
British East Africa	22,141	12,292	....	....	....
Canada	752	380	....	....	....
Chile	55,986	29,928	....	....	....
China	48,656	25,073	48,656	25,073	40,300
Cuba	18,795	8,926	....	....	....
India and Dependencies	65	33	65	33	51
Mexico	350,463	130,120	258,756	91,137	60,145
New Zealand	270,414	128,899	....	....	....
Peru	669,347	335,000	187,140	98,014	95,316
Portugal	336,154	157,213	....	....	....
Southern Rhodesia	420,947	210,308	....	....	....
Spain	500,760	246,962	....	....	....
Union of South Africa	127,362	66,253	....	....	....
	18,147,172	8,639,374	9,936,544	4,773,861	4,579,577
1946					
Argentina	263,118	141,480	265,755	145,178	120,146
Australia	450,982	256,933	23,677	13,729	10,866
Belgian Congo	589,071	307,591	789,544	426,908	390,023
Bolivia	6,029,435	2,488,924	5,842,279	2,525,312	2,097,988
Brazil	2,319,885	1,253,565	3,297,648	1,816,486	1,567,750
British East Africa	19,139	10,190	....	....	....
Canada	245,906	111,692	....	....	....
China	358,255	186,822	162,628	82,514	77,442
Cuba	....	....	16,968	8,544	8,657
France	551	37	551	37	91
Mexico	104,966	49,814	66,253	31,976	37,783
Netherlands	54,880	31,386	54,880	31,386	25,174
Netherlands Indies	321,809	178,487	222,525	123,075	107,251
New Zealand	35,640	18,577	301,156	154,366	144,505
Peru	433,348	243,583	552,052	307,158	258,894
Portugal	297,502	150,149	....	....	....
Southern Rhodesia	967,663	488,701	1,735,472	888,599	838,150
Spain	398,384	194,557	227,784	113,526	107,187
Thailand	220,374	113,596	178,883	92,217	41,529
Union of South Africa	249,064	127,820	62,322	33,356	25,755
United Kingdom	893,509	460,618	135,385	75,071	69,938
	14,253,481	6,814,522	13,935,762	6,869,438	5,929,129

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary R. R. SAYERS, Director

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FOR RELEASE MAY 12, 1947

MINERAL MARKET REPORT
MMS NO. 1516

PRODUCTION OF COKE AND COAL CHEMICAL MATERIALS FROM COAL-GAS RETORTS IN 1946

Production of retort coke in the United States in 1946 totaled 753,335 net tons, according to producers' reports received by the Bureau of Mines, United States Department of the Interior. This decrease of more than 12 percent from the 1945 output continued the downward trend that started in the early twenties. The manufacture of retort coke, dependent on the production of coal gas, declined in recent years principally because of the substitution of water gas, natural gas, or liquified petroleum gases for coal gas at a number of installations. Conversions were curtailed temporarily during the war years because of shartages of labor and materials but a definite acceleration in conversions was noted in 1946 with one plant changing from the manufacture of coal gas to water gas, 4 plants to natural gas, and 11 plants to propane-air gas. A total of 174 retorts having an annual coal-carbonizing capacity of 57,000 net tons were reported as being abandoned in 1946, and at the end of the year only 1,787 retorts were in operation of the 2,148 reported in existence. The annual coal-carbonizing capacity of all retorts or ovens in existence on December 31, 1946, totaled 1,608,500 net tons and the rate of operation for the year was 77 percent of the carbonizing capacity.

The quantity of bituminous coal charged into coal-gas retorts in 1946 decreased 12 percent from 1945. The average cost of bituminous coal at producers' plants advanced $0.58 per ton, or 9 percent, over the 1945 figure and reached $7.40. This gain was due to the increases in mining and transportation costs incurred during 1946 because of wage increases granted to miners under the terms of the Krug-Lewis agreement of May 29, 1946, and the increase in freight rates on coal granted to the railroads by the Interstate Commerce Commission on July 1, 1946.

The disposal pattern for retort coke in 1946 varied only slightly from previous years as indicated by the consumption of 381,081 tons, or 51 percent, of the total output by producers for heating benches, manufacturing water gas and producer gas, and for other miscellaneous plant uses. Of the total tonnage used by producers, 43 percent was used as bench fuel, 41 percent as water-gas fuel, 9 percent as producer-gas fuel, and 7 percent for other purposes. The bulk of retort coke sold by producers is marketed for household fuel and, in 1946, 92 percent of the total sales was so marketed. Sales for use in the manufacture of water gas and for other industrial purposes were small, amounting to only 33,009 tons. There was little change in stocks of coke at producers' plants from 1945 and at the end of 1946 were only 300 tons higher.

A directory showing names and addresses of retort coke producers who reported production to the Bureau of Mines in 1946 can be obtained on request to the Anthracite and Coke Section, Coal Economics Division, Bureau of Mines, Washington 25, D. C.

Prepared by Maxine M. Otero, J. A. DeCarlo, and J. A. Corgan, Chief, Anthracite and Coke Section under the supervision of T. W. Hunter, Chief, Coal Economics Division, Economics and Statistics Branch.

TABLE 1. - SALIENT STATISTICS OF THE COAL-GAS INDUSTRY IN THE UNITED STATES IN 1946

	Horizontal retorts	Vertical retorts and gas ovens	Total
Coke produced:			
Net tons	278,170	475,165	753,335
Value	$2,446,619	$4,183,102	$6,629,721
Screenings or breeze produced net tons	28,100	68,719	96,819
Coal charged into retorts:			
Net tons	456,421	783,694	1,240,115
Value	$3,478,003	$5,696,959	$9,174,962
Average per ton	$7.62	$7.27	$7.40
Average yield in percent of coal charged:			
Coke	60.95	60.63	60.75
Breeze (at plants actually recovering)	8.90	9.13	9.06
Retorts:			
In existence December 31	1,559	a/589	2,148
In operation December 31	1,205	a/582	1,787
Annual coal capacity net tons	652,100	956,400	1,608,500
Coke used by producer -			
For manufacture of water gas:			
Net tons	76,607	81,221	157,828
Value	$674,118	$718,735	$1,392,853
For manufacture of producer gas:			
Net tons	- - -	34,286	34,286
Value	- - -	$197,753	$197,753
For bench fuel:			
Net tons	77,092	85,706	162,798
Value	$603,296	$733,491	$1,336,787
For other purposes:			
Net tons	14,750	11,419	26,169
Value	$104,487	$79,762	$184,249
Coke sold to other consumers -			
For manufacture of water gas:			
Net tons	11,479	9,161	20,640
Value	$107,883	$79,699	$187,582
For domestic use:			
Net tons	107,660	247,676	355,336
Value	$1,021,760	$2,326,025	$3,347,785
For other industrial use:			
Net tons	1,811	10,558	12,369
Value	$9,613	$98,690	$108,303
Stocks on January 1, 1947:			
Coke net tons	19,636	49,583	69,219
Breeze do	4,395	14,407	18,802
Coal chemical materials:			
Tar:			
Production gallons	5,555,805	11,908,587	17,464,392
Sales -			
For refining:			
Gallons	3,268,772	8,502,682	11,771,454
Value	$145,707	$409,857	$555,564
For fuel:			
Gallons	33,898	- - -	33,898
Value	$1,672	- - -	$1,672
For other purposes:			
Gallons	2,899,632	3,632,057	6,531,689
Value	$137,865	$189,220	$327,085
Stocks on January 1, 1947 gallons	1,219,058	1,338,598	2,557,656
Per ton of coal charged do	12.17	15.20	14.08
Ammonia liquor (NH_3 content):			
Production pounds	- - -	1,259,469	1,259,469
Sales do	- - -	1,268,254	1,268,254
Value	- - -	$31,703	$31,703
Stocks on January 1, 1947 pounds	- - -	110,238	110,238
Per ton of coal charged do	- - -	3.52	3.52

a/ Includes 15 gas ovens.

PRODUCTION AND SALES OF COKE, BY STATES

Massachusetts, as in previous years, continued to lead all States in the production of retort coke accounting for 31 percent of the total output. Following Massachusetts in order of tonnages were Wisconsin, New York, Pennsylvania, and Rhode Island which together produced 40 percent of the total. There were 75 active plants located in 25 States that reported production in 1946 compared with 86 plants in 26 States in 1945. The State of West Virginia dropped from the list of producing States as the Bluefield Gas Company reported that operations were discontinued in 1946. Regional grouping of the producing States indicates that 41 percent of the national output is produced in the New England area with the Lake Dock States accounting for 23 percent.

TABLE 2. - NUMBER OF RETORTS, COAL CHARGED, COKE PRODUCED, VALUE, AND STOCKS IN 1946, BY STATES

State	Active plants	Retorts		Coal charged (net tons)	Yield of coke from coal (percent)	Coke produced (net tons)	Value of coke		Coke stocks December 31, 1946 (net tons)
		In existence	In operation end of year				Total	Per ton	
Alabama and Georgia	5	24	18	10,193	52.12	5,313	$31,030	$5.84	19
Colorado and Washington	5	162	127	31,950	50.00	15,975	138,146	8.65	1,693
Connecticut and Rhode Island	3	a/71	a/68	125,097	59.40	74,304	709,815	9.55	11,127
Illinois, Indiana, and Iowa	3	45	37	27,841	62.42	17,377	211,000	12.14	373
Kentucky, Tennessee, and Virginia	3	110	50	37,463	65.09	24,386	172,289	7.07	2,598
Maine and Vermont	3	42	24	13,676	58.50	8,001	82,810	10.35	613
Massachusetts	9	428	398	404,854	56.88	230,293	2,159,820	9.38	27,917
Michigan	13	150	137	56,342	67.83	38,214	293,839	7.69	3,345
Minnesota and North Dakota	6	144	116	46,275	58.77	27,196	275,201	10.12	3,824
New Jersey, New York, and Ohio	4	254	232	107,513	65.91	70,862	550,209	7.76	11,407
North and South Carolina	10	360	300	76,748	59.82	45,910	263,840	5.75	4,366
Pennsylvania	5	129	99	71,945	64.97	46,740	478,379	10.23	182
Wisconsin	6	229	181	230,218	64.62	148,764	1,263,343	8.49	1,750
	75	2,148	1,787	1,240,115	60.75	753,335	6,629,721	8.80	69,219

a/ Includes 15 gas ovens.

TABLE 3. - COAL CHARGED AND COKE PRODUCED IN THE UNITED STATES, BY GEOGRAPHICAL REGIONS, 1943-46, IN NET TONS

Region	1943		1944		1945		1946	
	Coal charged	Coke produced	Coal charged	Coke produced	Coal charged	Coke produced	Coal charged	Coke produced
New England	534,591	305,561	546,799	318,434	576,911	333,217	543,627	312,598
Middle Atlantic	206,343	136,855	208,639	135,460	199,972	130,028	177,778	116,762
Michigan	90,894	60,151	86,139	57,536	72,572	48,334	56,342	38,214
Illinois-Indiana a/	40,659	24,532	42,612	24,910	42,195	25,588	29,521	18,217
Lake Dock	275,719	157,892	295,818	179,805	287,619	180,349	276,493	175,960
Southeast	254,273	156,744	230,987	140,956	191,217	119,074	124,404	75,609
Southwest, Mountain, and Pacific	33,737	20,369	35,488	21,531	35,625	22,656	31,950	15,975
	1,436,216	862,104	1,446,482	878,632	1,406,111	859,246	1,240,115	753,335

a/ Includes Ohio and Missouri Valley Regions.

TABLE 4. - COKE USED BY PRODUCER IN THE UNITED STATES AND SOLD IN 1946, BY STATES

State	Used by producer					
	To make producer or water gas		For bench fuel		For other purposes	
	Net tons	Value	Net tons	Value	Net tons	Value
Alabama and Georgia	833	$4,998	1,936	$10,857	1,771	$10,105
Colorado and Washington	3,480	36,223	6,912	50,218	961	5,900
Connecticut and Rhode Island	17,828	175,700	17,890	108,419	5,123	30,400
Illinois, Indiana, and Iowa	4,557	62,435	909	6,417	114	632
Kentucky, Tennessee, and Virginia	3,727	21,856	7,472	46,567	3,566	23,938
Maine and Vermont	2,193	17,352	2,347	24,884	121	1,599
Massachusetts	62,634	548,553	57,339	491,647	4,012	37,368
Michigan	5,252	37,325	10,080	76,963	1,187	8,339
Minnesota and North Dakota	2,427	24,548	7,927	78,430	2,396	24,229
New Jersey, New York, and Ohio	6,118	47,250	20,660	156,331	205	1,593
North and South Carolina	16,732	88,015	14,788	79,480	5,061	27,071
Pennsylvania	33,440	355,425	11,216	111,860	569	2,331
Wisconsin	32,893	170,926	3,322	32,474	1,083	10,694
	192,114	1,590,606	162,798	1,274,547	26,169	184,249

State	Sold					
	For manufacture of water gas		For domestic use		For other industrial use	
	Net tons	Value	Net tons	Value	Net tons	Value
Alabama and Georgia	- - -	- - -	2,469	$14,512	1	$5
Colorado and Washington	- - -	- - -	9,654	85,700	187	711
Connecticut and Rhode Island	5,017	$47,460	27,602	274,750	1,673	15,827
Illinois, Indiana, and Iowa	- - -	- - -	12,693	152,229	- - -	- - -
Kentucky, Tennessee, and Virginia	650	5,160	7,890	66,184	1,000	6,170
Maine and Vermont	- - -	- - -	3,894	44,030	- - -	- - -
Massachusetts	10,831	92,380	98,787	1,018,420	1,470	13,598
Michigan	- - -	- - -	19,876	155,242	- - -	- - -
Minnesota and North Dakota	945	9,922	16,313	168,958	- - -	- - -
New Jersey, New York, and Ohio	3,002	32,250	39,636	302,851	- - -	- - -
North and South Carolina	- - -	- - -	11,525	78,979	- - -	- - -
Pennsylvania	195	410	1,126	7,223	623	2,727
Wisconsin	- - -	- - -	103,871	978,707	7,415	69,265
	20,640	187,582	355,336	3,347,785	12,369	108,303

PRODUCTION AND SALES OF TAR AND AMMONIA, BY STATES

The decline in retort-coke production was accompanied by a decline of 12 percent in the output of crude tar. The yield of crude coal tar per ton of coal carbonized also dropped from 14.11 gallons in 1945 to 14.08. Although ceiling prices on crude coal tar were abolished by the President's Decontrol Order of November 9, 1946, the average unit value per gallon on tar sales increased only $0.002 over 1945. The principal consumers of coal tar are the tar distillers, and in 1946, 64 percent of the total sales moved to refining plants.

The recovery of ammonia from coal-gas retorts in the form of ammonia liquor which was practiced at 100 plants producing 14,500,000 pounds of ammonia in 1920 has steadily declined and in 1946 only 1,259,469 pounds were produced at 4 plants.

Crude light oil, was produced at only a few plants and data cannot be shown without revealing individual operations.

TABLE 5. - PRODUCTION, SALES, AND STOCKS OF CRUDE COAL TAR AT COAL-GAS PLANTS IN THE UNITED STATES IN 1946

State	Produced (gallons)		Sold			Stocks December 31, 1946 (gallons)
	Total	Per ton of coal charged	Gallons	Value		
				Total	Per gallon	
Alabama and Georgia	116,821	11.46	153,218	$5,501	$.036	100,317
Colorado and Washington	276,346	8.65	265,907	17,751	.067	122,248
Connecticut and Rhode Island	1,945,848	15.55	1,986,870	91,946	.046	215,781
Illinois, Indiana, and Iowa .	376,968	13.54	360,116	16,695	.046	38,422
Kentucky, Tennessee, and Virginia	687,382	18.35	708,663	39,451	.056	50,925
Maine and Vermont	157,817	11.54	129,141	7,025	.054	91,428
Massachusetts	5,681,152	14.03	5,949,072	310,499	.052	940,787
Michigan	814,481	14.46	899,395	32,363	.036	208,536
Minnesota and North Dakota ..	768,545	16.61	785,044	29,794	.038	79,852
New Jersey, New York, and Ohio	1,359,317	12.64	1,350,317	66,721	.049	106,000
North and South Carolina	1,188,895	15.49	1,567,924	66,744	.043	270,350
Pennsylvania	739,123	10.27	850,536	46,443	.055	106,722
Wisconsin	3,351,697	14.56	3,330,838	153,388	.046	226,288
	17,464,392	14.08	18,337,041	884,321	.048	2,557,656

TABLE 6. - PRODUCTION, SALES, AND STOCKS OF AMMONIA LIQUOR (NH_3 CONTENT) AT COAL-GAS PLANTS IN THE UNITED STATES IN 1946

State	Produced (pounds)		Sold			Stocks December 31, 1946 (pounds)
	Total	Per ton of coal charged	Pounds	Value		
				Total	Per pound	
Massachusetts, New York, and Wisconsin	1,259,469	a/3.52	1,268,254	$31,703	$.025	110,238

a/ Calculated on coal charged at plants actually recovering.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

1947
UNIVERSITY OF ILLINOIS

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MINERAL MARKET REPORTS
M. M. S. NO. 1517.

PLATINUM AND ALLIED METALS IN 1946

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

Suspension of ceiling prices on the six platinum-group metals by the Office of Price Administration on April 29, 1946, followed by greatly advanced quotations on platinum, ruthenium, and osmium, was a feature of the platinum industry in 1946, according to the Bureau of Mines, United States Department of the Interior. By mid-September platinum and ruthenium had been raised $58 an ounce each and osmium had been upped $50. Insufficient supplies, active demand, and speculation were largely responsible for the higher prices. Coincident with improvements in the supply and demand position, several price reductions were made on platinum and ruthenium and by the year-end quotations on these metals had dropped to $56 an ounce.

Refining of platinum in the United States was at a rate 40 percent lower than in 1945 and was greatly below the domestic demand, which, however, was 30 percent smaller than in 1945. The refined-metal deficiency was met by imports of 119,853 ounces and by release of 16,358 ounces by the Office of Metals Reserve. Much lessened demand and more abundant supplies of platinum in the fourth quarter of 1946 were reflected in a substantial increase in inventories of refiners and dealers. The jewelry trade was by far the largest outlet for platinum in 1946, taking 61 percent of the total. More platinum was sold to the jewelry trade in 1946 than in any previous year. The record sales to the jewelry trade, however, were more than offset by drastic declines in demand by the chemical and electrical industries.

Refining of palladium in the United States was about half that of 1945 and was only one-seventh of sales, which established a new record. Sales of palladium in 1946 were only 7 percent less than those of platinum. The deficit in palladium was met by imports of 187,555 ounces of refined metal. The electrical industry again was the largest buyer of palladium and was responsible for most of the gain in total sales. However, demand by the jewelry trade, the second largest outlet, was slightly stronger than in 1945.

Refining of the other platinum metals - iridium, osmium, rhodium, and ruthenium - was much less in 1946 than in 1945 and was also substantially smaller than sales, which were greater for each metal except rhodium. The smaller recoveries by domestic refiners were supplemented by imports. Iridium and ruthenium were in much demand by the jewelry trade in 1946. Sales of rhodium were 26 percent less than in 1945.

Prepared by Hubert W. Davis and Gertrude N. Greenspoon under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

PRODUCTION

Refining of new platinum metals in 1946 was 43 percent less than in 1945. Of the new metals recovered in 1946, 74 percent was chiefly from concentrates from Canada and crude from Colombia, 25 percent was from domestic crude (chiefly from Alaska), and 1 percent was a byproduct of domestic gold and copper ores.

New platinum metals recovered by refiners in the United States in 1946, by sources, in troy ounces

	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
Domestic from -							
Crude platinum....	23,107	166	2,437	447	626	91	26,874
Gold and copper refining.........	555	2,735	73	......	....	......	3,363
	23,662	2,901	2,510	447	626	91	30,237
Foreign from -							
Crude platinum.... Nickel and copper refining.........	69,285	957	485	28	770	16	71,541
Total recovery:							
1946.	92,947	3,858	2,995	475	1,396	107	101,778
1945.	162,032	28,649	5,783	845	4,731	2,466	204,506

Secondary platinum metals recovered in 1946 comprised 40,385 ounces of platinum, 27,856 ounces of palladium, 2,002 ounces of iridium, 773 ounces of osmium, 714 ounces of rhodium, and 907 ounces of ruthenium - a total of 72,637 ounces. Comparable figures for 1945 are as follows: Platinum, 58,942 ounces; palladium, 32,968 ounces; iridium, 812 ounces; osmium, 586 ounces; rhodium, 1,719 ounces; and ruthenium, 1,095 ounces - a total of 96,122 ounces. Substantial quantities of worn-out catalysts, spinnerets, laboratory ware, and other products are returned by consumers to refiners for refining. The refined platinum metals recovered from these products (or their equivalent in refined metals) are returned to the consumers. The platinum metals so recovered are not included in the figures of secondary metals.

FOREIGN TRADE

(Figures on imports and exports from records of the U. S. Department of Commerce)

Imports. - Imports of platinum metals into the United States established a new high in 1946; they were 6 percent more than in 1945, the previous record year. Imports of refined metals were 57 percent greater than in 1945 but those of unrefined materials were 56 percent smaller. The principal sources of imported platinum metals in 1946 were Canada (216,762 ounces), U. S. S. R. (106,851 ounces), United Kingdom (40,199 ounces), and Colombia (38,658 ounces).

Platinum metals (unmanufactured) imported for consumption in the United States, 1945-46, in troy ounces

Material	1945	1946 1/
Unrefined materials: 2/		
Ores and concentrates of platinum metals	138,089	28,639
Grains and nuggets (including crude, dust and residues)	31,875	38,735
Sponge and scrap	2,008	7,962
Osmiridium	57	676
	172,029	76,012
Refined metals:		
Platinum	72,849	119,853
Palladium	118,270	187,555
Iridium	6,197	12,402
Osmium	925	1,969
Rhodium	3,975	525
Ruthenium	9,053	8,894
	211,269	331,198
	383,298	407,210

1/ Preliminary and subject to revision.
2/ The concentrates and crude imported from Canada contain platinum, palladium, iridium, rhodium, and ruthenium, and the crude sponge imported from Canada contains platinum and palladium. Although the U. S. Department of Commerce records "platinum content" for these entries, the Bureau of Mines has determined from the importers of these materials that most of the entries reflect the platinum metals content. The Bureau of Mines has also determined from the largest importer of crude platinum from Colombia that the entries for his material, recorded as "platinum content" by the U. S. Department of Commerce, represent the gross weight of the material.

Exports. - Exports of platinum were 15,468 ounces in 1946 (7,781 ounces in 1945) and those of the other platinum-group metals were 4,294 ounces (10,951 ounces in 1945).

SALES

Sales of platinum metals to consumers in the United States were 484,575 ounces in 1946, a decline of 12 percent from 1945, which was an all-time high.

Platinum continued to be the most widely used metal of the group but in 1946 sales were only 8 percent greater than palladium. Platinum accounted for 48 percent of the platinum metals sold to domestic consumers in 1946. By taking 61 percent of the total platinum sold in 1946, the jewelry trade was the chief buyer, displacing the chemical industry, which ranked first in 1945 but dropped to third place in 1946. Sales of platinum (144,015 ounces) to the jewelry trade were 77 percent greater than in 1945 and were larger than in any previous year. Drastic declines in sales of platinum to the chemical and electrical industries more than offset the record demand by the jewelry trade.

Sales of palladium established a new high in 1946 and for the first time almost equaled those of platinum. Palladium accounted for 45 percent of the platinum metals sold to domestic consumers in 1946. The electrical industry retained first place as a buyer of palladium in 1946 by taking 91,243 ounces (42 percent) of the total palladium sold. Sales of palladium to the electrical industry established a new record in 1946 and were 32 percent greater than in 1945. Sales of palladium to the jewelry trade continued at a high level and were 7 percent more than in 1945.

Sales of the other platinum metals – iridium, osmium, rhodium, and ruthenium – were comparatively small; they made up 7 percent (32,915 ounces) of the total platinum metals sold in 1946. Iridium and ruthenium, hardening additions for platinum and palladium, were in much demand by the jewelry trade and, consequently, were the metals of this group most extensively sold, followed in order by rhodium and osmium.

The following table shows sales of platinum metals by refiners, importers, dealers, and Office of Metals Reserve to consumers in the United States in 1945 and 1946.

Platinum metals sold to consuming industries in the United States in 1945 and 1946, in troy ounces

Industry	Platinum	Palladium	Iridium, osmium, rhodium, and ruthenium	Total
1945				
Chemical	115,816	8,988	6,182	130,986
Electrical	107,260	69,300	5,572	182,132
Dental and medical	30,871	42,259	900	74,030
Jewelry and decorative	81,305	56,578	10,026	147,909
Miscellaneous and undistributed	1,599	8,107	5,282	14,988
	336,851	185,232	27,962	550,045
1946				
Chemical	31,107	15,092	4,219	50,418
Electrical	35,007	91,243	3,513	129,763
Dental and medical	21,859	41,407	145	63,411
Jewelry and decorative	144,015	60,294	17,039	221,348
Miscellaneous and undistributed	2,491	9,145	7,999	19,635
	234,479	217,181	32,915	484,575

STOCKS

Stocks of platinum metals in all forms held by refiners, importers, and dealers were 362,023 ounces as of December 31, 1946, an increase of 20 percent over 1945.

Stocks of platinum metals held by refiners, dealers, importers, and Office of Metals Reserve in the United States, Dec. 31, 1945 and 1946, in troy ounces

Year	Refiners, dealers, and importers			Office of Metals Reserve		
	Refined, unrefined, and in process of refining			Refined metals 1/		
	Platinum	Palladium	Iridium, osmium, rhodium, and ruthenium	Platinum	Palladium	Iridium, osmium, rhodium, and ruthenium
1945..........	138,839	119,757	43,376	59,638	72	3,542
1946..........	187,624	132,523	41,876	78,137	(2)	(2)

1/ In addition, there were 15,251 ounces of crude platinum in process on December 31, 1945.

2/ Metals have been sold, transferred to Bureau of Federal Supply, or otherwise disposed of.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

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FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

NICKEL IN 1946

Despite a 19-percent decline in consumption of nickel in the United States in 1946 compared with 1945, a peacetime record was established, according to the Bureau of Mines, United States Department of the Interior. Strikes in the steel and automotive industries were partly responsible for the smaller consumption in 1946; nevertheless, 156,476,152 pounds of nickel (exclusive of scrap) were consumed. Most of the nickel used in 1946 was in the form of new metal, but proportionately more oxide was used than in 1945.

The steel industry continued to be the largest consumer of nickel and over half (36,000,000 pounds) of that used in this industry in 1946 was for stainless steels. However, the NE (national emergency) triple-alloy steels containing nickel, chromium, and molybdenum (which came into prominence during the war), and the prewar standard nickel-molybdenum types of steels (which were restricted in use for part of the war), required substantial quantities of nickel in 1946.

The data in the next tables cover all known consumers of nickel in the form of primary, secondary, and oxide. The figures for nickel salts, however, fall short of the total; nevertheless, they cover most all of the larger and many of the smaller users of nickel in this form.

Nickel (exclusive of purchased and home scrap) consumed and in stock in the United States in 1945-46, by forms, in pounds of contained nickel

Form	Stocks at consumers' plants Dec. 31, 1945	Consumption		Stocks at consumers' plants Dec. 31, 1946
		1945	1946	
Primary	1/12,744,749	153,235,789	118,864,652	16,581,310
Secondary (remelted from scrap)	1/ 103,495	2/7,906,606	154,717	32,472
Oxide	1/1,402,711	11,035,457	17,389,447	2,050,000
Matte	3,409,699	19,809,007	19,115,689	5,975,787
Mayari iron ore	262,125	100	....	255,630
Nickel-cobalt compound	3,569	8,681	(3)	(3)
Salts	1/ 401,056	509,108	951,647	399,797
	1/18,327,404	192,504,748	156,476,152	25,294,996

1/ Revised figures.
2/ Includes an undetermined quantity of scrap.
3/ Not available.

Prepared by Hubert W. Davis under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Nickel (exclusive of purchased and home scrap) consumed in the United States, 1945-46, by uses

Use	Pounds of nickel	
	1945	1946
Ferrous:		
Stainless steels	111,114,967	35,986,164
Other steels		31,193,998
Cast irons	6,025,564	5,973,919
Nonferrous (comprises copper-nickel alloys, nickel silvers, brass, bronze, beryllium, magnesium, and aluminum alloys, and Monel, Inconel, and malleable nickel)	52,802,013	51,819,728
High temperature and electrical resistance alloys	7,902,392	13,596,601
Electroplating:		
Anodes	12,736,349	11,539,323
Solutions		1,542,750
Catalysts	890,253	544,093
Ceramics	43,042	80,568
Other	990,168	4,199,008
	192,504,748	156,476,152

Nickel production in Canada was 94,833 short tons in 1946 compared with 122,565 tons in 1945. Production of nickel oxide in Cuba was 16,040 short tons (12,391 tons nickel content) in 1946 compared with 15,425 tons (12,015 tons nickel content) in 1945. Domestic output of nickel was, as heretofore, small in 1946; it was 352 short tons compared with 1,155 tons in 1945.

Imports of nickel in all forms were 14 percent less in 1946 than in 1945. As heretofore, Canada was the chief source of the imports; it supplied 141,433,524 pounds of metallic nickel, 38,092,080 pounds of matte, 1,352,021 pounds of oxide, and 2,050 pounds of nickel silver. In 1946, Cuba furnished 27,689,919 pounds of oxide, the United Kingdom and Norway supplied 881,330 and 9,999 pounds, respectively, of metallic nickel, and Switzerland 182 pounds of metallic nickel and 7,712 pounds of nickel silver.

Nickel imported for consumption in the United States, 1945-46, by classes, in pounds
(Source: U. S. Department of Commerce)

Class	1945	1946
Nickel ore and matte	50,077,170	38,092,080
Nickel pigs, ingots, shot, etc.	156,804,166	142,324,523
Nickel bars, rods, tubes, etc.	51	512
Nickel oxide	38,174,845	29,041,940
Nickel silver or German silver in sheets, strips, rods and wire	408	9,762

Exports of nickel comprise largely products manufactured from imported raw materials. Exports of alloys and scrap were 2½ times more than in 1945, those of nickel silver nearly 8 times greater, and those of metallic nickel were slightly larger. Exports of nickel-chrome electric resistance wire were 16 percent less.

Nickel exported from the United States, 1945-46,
by classes, in pounds
(Source: U. S. Department of Commerce)

Class	1945	1946
Ore, concentrate, and matte	15	21,083
Alloys and scrap containing nickel (including Monel metal)	4,573,476	11,194,004
Metal in ingots, bars, sheets, etc	1,614,045	1,883,881
Nickel chrome electric resistance wire	971,549	817,003
Nickel silver or German silver, crude, scrap, or bars, rods, etc	267,145	2,037,788
Nickel salts and compounds	326,749	(1)

1/ Beginning Jan. 1, 1946, not separately classified.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

JUL 3 1947

For Release June 10, 1947

MINERAL MARKET REPORTS
MMS NO. 1519

LEAD AND ZINC PIGMENTS AND ZINC SALTS IN 1946

The lead and zinc pigments industry had to contend in 1946 with a continuation of the unbalanced supply-demand relationship that prevailed in 1945 and several earlier years, despite the fact that 1946 was a full peacetime year, according to the Bureau of Mines, United States Department of the Interior. Demand for pigments as a whole was at near record levels, but shortages of essential crude materials, again notably lead and linseed oil, made it impossible for producers to fill a large segment of requirements. Labor strikes prevented the disparity from being even greater than it was. Strikes in chief pigment-consuming industries, such as the automobile industry, reduced potential demand by such industries, and steel and coal strikes interferred with construction and other activity that would have increased pigments requirements materially. Presumably the prospective demand cut off by strikes in 1946 was merely deferred so that total pigment needs appear headed for new records in the near future. Various pigments probably will share unequally in supplying the demand, however, white lead production gains, for example, depend chiefly on improvement in over-all supplies of pig lead, whereas present capacity output of titanium pigments will rise with the completion of plant expansion now in progress.

Shipments of the pigments and chemicals covered by this report were generally at higher levels in 1946 than in 1945. Noteworthy exceptions were litharge and red lead which had fared better than other lead pigments in restriction orders of the recent past. White lead (carbonate and sulfate) had borne the brunt of lead curtailment in 1945, so the fact that these pigments rose more than other products covered is not as significant as it would appear at first. Shipments of leaded zinc oxide in 1946 had been exceeded only once before, in 1941, of the lead-free variety only in the boom years of 1928 and 1929, and of zinc sulfate established a new high record. The performance of the zinc group is partly a reflection of the more abundant supplies of zinc as compared with lead.

Price controls on all products covered here were removed by general order of the President, effective November 10. Prices rose immediately and by the end of the year pigment prices were at the highest rates for many years, and in the case of lead pigments were the highest ever recorded.

Prepared by Helena M. Meyer and Alethea W. Mitchell, under the supervision of Charle White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Lead and zinc pigments and zinc salts shipped by domestic manufacturers in the United States, 1945-46

	1945			1946		
	Short tons	Value		Short tons	Value	
		Total	Per ton		Total	Per ton
Basic lead sulfate or sublimed lead:						
White................	2,235	$318,900	$143	(1)	(1)	(1)
Blue..................	1,660	237,890	143	(1)	(1)	(1)
Red lead................	47,381	7,963,888	168	32,526	2/ $6,398,035	2/ $196
Orange mineral..........	230	59,906	260	123	(2)	(2)
Litharge................	138,798	20,566,670	148	133,799	23,440,389	175
White lead:						
Dry..................	27,382	4,346,124	159	1/ 41,892	1/ 7,491,217	1/ 179
In oil 3/............	23,788	5,552,118	233	24,609	6,265,030	255
Zinc oxide..............	127,955	17,708,795	138	157,851	22,660,450	144
Leaded zinc oxide.......	62,598	8,290,073	132	67,971	9,694,067	143
Lithopone...............	136,161	10,645,316	78	147,001	11,840,596	81
Zinc chloride, 50° Baume.	56,230	2,828,474	50	57,316	3,133,891	55
Zinc sulfate............	20,854	1,712,058	82	24,931	2,192,706	88

1/ Basic lead sulfate included under white lead (dry) in 1946; Bureau of Mines not at liberty to publish.

2/ Value of orange mineral included under red lead in 1946; Bureau of Mines not at liberty to publish.

3/ Weight of white lead only.

The distribution of zinc sulfate shipments on a dry basis was available for the first time for 1945. Revised data for 1945 and comparable figures for 1946 are shown below.

Shipments of zinc sulfate by uses, 1945-46, in short tons

Industry	1945		1946	
	Gross weight	Dry basis 1/	Gross weight	Dry basis
Rayon........................	6,729	5,393	7,634	5,883
Agriculture..................	6,645	5,062	10,816	8,178
Chemicals....................	2,617	1,749	2,254	1,488
Flotation reagent............	1,232	935	1,084	643
Paints and varnish processing..................	589	539	174	151
Textile dyeing and printing....................	534	474	552	491
Glue.........................	260	186	511	335
Electrogalvanizing...........	255	161	488	315
Other........................	1,993	1,342	1,418	943
	20,854	15,841	24,931	18,427

1/ Revised figures.

Shipments of lead and zinc pigments, by uses, 1945-46

	1945 Short tons	1946 Short tons
White lead (dry and in oil)		
Paints	46,418	1/60,943
Ceramics	839	1,367
Other	3,913	1/4,191
	51,170	1/66,501
Red lead		
Storage batteries	26,725	19,115
Paints	16,438	9,318
Ceramics	626	1,228
Other	3,592	2,865
	47,381	32,526
Orange mineral		
Ink manufacture	63	78
Color pigments	151	18
Other	16	27
	230	123
Litharge		
Storage batteries	3/79,981	3/75,836
Insecticides	18,061	14,259
Ceramics	11,511	13,166
Chrome pigments	11,394	10,877
Oil refining	6,419	6,682
Rubber	1,864	2,131
Varnish	2,752	3,302
Linoleum	115	106
Other	6,701	7,440
	138,798	133,799

	1945 Short tons	1946 Short tons
Basic lead sulfate		
Paints	3,009	(1)
Rubber	200	
Storage batteries	-----	
Other	686	
	3,895	
Lithopone		
Paint, varnish and lacquers	2/109,398	2/123,279
Floor coverings and textiles	15,821	15,167
Rubber	977	1,607
Other	9,965	6,948
	136,161	147,001
Zinc oxide		
Rubber	63,447	83,776
Paints	28,014	34,785
Chemical warfare	2,053	-------
Floor coverings and textiles	12,177	4/12,870
Ceramics	5,086	9,056
Other	17,178	17,364
	127,955	157,851
Leaded zinc oxide		
Paints	58,852	64,816
Rubber	200	166
Other	3,546	2,989
	62,598	67,971

1/ Data for basic lead sulfate in 1946 included under white lead; Bureau of Mines not at liberty to show separately.

2/ Includes a small quantity, not separable, used for printing ink.

3/ In addition, 56,000 tons of black or grey oxide in 1945 and 46,000 tons in 1946 were produced by the makers of storage batteries in their own plants.

4/ Of which 9,363 tons were for rayon.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

FOR RELEASE JUNE 3, 1947.

MINERAL MARKET REPORTS
M. M. S. NO. 1520.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

MOLYBDENUM IN 1946

For the third successive year the production of molybdenum concentrates in 1946 declined from the all-time high of 1943, according to the Bureau of Mines, Department of the Interior, in a report presenting the final figures for the year. The output (in terms of molybdenum content) of 18,218,000 pounds was 59 percent of that for 1945. Consumption decreased 54 percent (to 14,994,000 pounds) from that in 1945. The net result was an increase in the inventory of concentrates in the hands of producers and consumers of 14 percent.

Imports in 1946 were 276,475 pounds and were, with the exception of 10 pounds from Mexico, entirely from Chile. The Chilean imports were for the purpose of refining and reexport. Exports of domestic concentrates (564,924 pounds) went to Sweden, United Kingdom, Canada, Cuba and Venezuela.

Salient statistics of the molybdenum industry in the United States, 1942-46, in thousands of pounds of molybdenum contained in ore and concentrates

	1942	1943	1944	1945	1946
Production	56,942	61,667	38,679	30,802	18,218
Imports for consumption	756	1,789	3,499	665	276
Shipments (including exports)	66,437	53,955	39,423	32,524	16,304
Consumption	56,388	49,891	31,520	32,696	14,994
Stocks (producers' and consumers') December 31	12,540	17,811	19,335	16,899	19,255

Production of molybdenite at straight molybdenum mines decreased 7,961,000 pounds (42 percent) and byproduct concentrates declined 4,623,000 pounds (39 percent). Byproduct molybdenum represented 38 percent of the total concentrates recovered in 1946 as compared with 38 percent in 1945 and 35 percent in 1944. Molybdenum was produced in six States, Colorado leading, followed by Arizona, California, Nevada, New Mexico and Utah. Arizona and New Mexico reversed the positions held in 1945. The total production of molybdenite concentrates in the United States for 1914-1946 inclusive has amounted to 443,153,000 pounds (Mo contained). In 1946 concentrates were recovered at 9 operations, of which 3 only operated on molybdenum ore, the other six making byproduct recoveries.

Prepared by Edwin K. Jenckes, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch. Import and export figures compiled by M. B. Price, of the Bureau of Mines, from records of the U. S. Department of Commerce.

Molybdenum ore and concentrates imported for consumption in the United States, 1945-46, by countries

Country	1945			1946		
	Pounds			Pounds		
	Gross weight	Molybdenum content	Value	Gross weight	Molybdenum content	Value
Canada.......	1/887,153	1/460,416	1/$443,359	....	....	....
Chile.........	251,368	138,252	75,000	1/561,034	1/276,465	1/$181,569
Mexico.......	....	....	....	60	10	38
Peru..........	124,753	66,131	48,126	....	....	....
	1,263,274	664,799	566,485	561,094	276,475	181,607

1/ Imported for conversion and reexport.

Molybdenum ore and concentrates exported from the United States, 1945-46, by countries

Country	1945			1946	
	Pounds			Pounds 1/	
	Gross weight	Molybdenum content	Value	Molybdenum content	Value
Canada......	1,176,800	705,633	$468,400	30,000	$24,000
Cuba........	....	....	....	1,940	815
France......	704,104	354,142	231,959	....	....
Netherlands.	22,400	12,544	10,097	....	....
Sweden......	191,400	115,364	91,954	301,031	172,109
U. S. S. R..	3,257,858	1,674,834	1,126,777	....	....
United Kingdom	....	....	....	231,153	173,365
Venezuela....	....	....	....	800	735
	5,352,562	2,862,517	1,929,187	564,924	371,024

1/ Beginning January 1, 1946 gross weight not reported.

The largest single use for molybdenum is as an alloying element in alloy steel. In 1946 the consumption of molybdenum products entering into alloy steel dropped 46 percent and alloy steel production declined 30 percent as compared to 1945, whereas the corresponding declines in 1945 as compared to 1944 were 14 and 19 percent respectively. The greater decrease in molybdenum consumption per ton of alloy steel in 1946 is accounted for by the reversion of the steel market from military to civilian uses where steels of lower alloy content are specified. The non-steel uses for molybdenum are comparatively small, but are growing proportionately to the total consumption of molybdenum. The high temperature-high strength applications (jet propulsion, gas turbine etc) are becoming increasingly important, although the quantities of Mo consumed in these alloys does not yet account for any considerable tonnage.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

FOR RELEASE JUNE 4, 1947.

MINERAL MARKET REPORTS
M. M. S. 1521

JUL 1947

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

VANADIUM IN 1946

Production and consumption of vanadium ore decreased for the third successive year, and were respectively 1,272,148 and 1,495,839 pounds (of contained V), in 1946 according to the Bureau of Mines, United States Department of the Interior, in a report containing the final figures for that year. Production dropped 1,619,765 pounds, and consumption decreased 2,325,580 pounds from the 1945 figures. For the third year consumption of ore exceeded production with a corresponding decline in inventory of mined ore. The year-end stocks of ore represent slightly more than 6 month's supply at the average 1946 consumption rate. Inventories of vanadium oxide decreased, while stocks of ferrovanadium increased moderately. The 1946 output was divided as follows: 81½ percent from Colorado, 5 percent from Utah and 13½ percent from Arizona and Idaho.

The United States production of vanadium ore for the period 1910-46, inclusive, has been 44,415,000 pounds (contained V), of which 22, 465,000 pounds (50½ percent) were mined in the years 1940-46.

Salient statistics of the vanadium industry in the United States, 1942-46, in pounds of vanadium contained

	1942	1943	1944	1945	1946
Mine shipments of ores and concentrates 1/	4,439,130	5,586,492	3,527,054	2,963,913	1,272,148
Imports:					
Ore or concentrates	2,422,376	2,052,620	1,284,603	1,552,307	791,057
Vanadium-bearing flue dust.	154,028	64,393	40,171	26,293	20,931
Exports of ore, concentrates, and vanadium oxide	22,140	38,180	6,254	113,927	6,051
Consumption (domestic ores only)	3,914,673	5,179,290	4,113,309	3,821,419	1,495,839

1/ Measured by receipts at mills and Government purchasing depots.

Imports and exports in 1946 declined from those in 1945 by 761,250 and 107,876 pounds (contained V) respectively.

Prepared by Edwin K. Jenckes, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch. Import and export figures compiled by M. B. Price, of the Bureau of Mines, from records of the U. S. Department of Commerce.

Vanadium ore or concentrates and vanadium-bearing flue dust imported for consumption in the United States, 1945-46, by countries

Country	1945			1946		
	Pounds			Pounds		
	Gross weight	Vanadium content	Value	Gross weight	Vanadium content	Value
Ore or concentrates:						
Peru............	8,777,018	1,552,307	$725,666	2,784,349	791,057	$390,077
Vanadium-bearing flue dust:						
Curacao (N.W.I.)	133,795	26,293	19,378	97,750	20,931	13,480

Vanadium in ore and concentrates [1] exported from the United States, 1943-46, by countries, in pounds

Country	1943	1944	1945	1946
Australia...............	1,445	.....	....	......
Canada..................	26,186	2,201	955	......
Curacao (N.W.I.).........	......	.....	3,715	......
France..................	......	.....	105,931	......
India and Dependencies...	......	4,053	2	......
Iran....................	10,549	.....	....	......
Italy...................	......	......	....	5,936
Switzerland.............	......	.....	....	115
U. S. S. R..............	......	.....	3,324	.....
	38,180	6,254	113,927	6,051

[1] Classed as ore and concentrates but probably also includes fused vanadium oxide.

Consumption of domestic vanadium ore rose continuously from 1940 (the first year in which these data were collected) to the peak year of 1943, when consumption was 2.4 times that in 1940. Since 1943 the consumption has fallen off each year, and that for 1946 was 29 percent of the 1943 figure.

Vanadium is used in various forms, 90 percent as an alloy (largely ferrovanadium) and 10 percent as chemical compounds (virtually all as fused or air-dried oxide). By far the largest part of the vanadium consumed enters alloy steel, as is shown by the accompanying table which presents the percentages of vanadium consumed by seven end uses.

Distribution of vanadium consumption by type of use in 1946, in percent

Use	Percent of total
Steel:	
High-speed steel	52.4
Other tool steel	10.8
Other alloy steel	25.8
Deoxidation and degasification	1.5
Total steel	90.5
Non-steel:	
Nonferrous alloys	4.8
Catalysts	3.1
Alloy cast iron	0.1
Total non steel	8.0
Undistributed	1.5
Grand total	100.0

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary **R. R. SAYERS, Director**

FOR IMMEDIATE RELEASE: June 17, 1947. MINERAL MARKET REPORT NO. MMS 1522.

CARBON BLACK - EXPANDS FURTHER IN 1946

Carbon black production and sales were in record volumes in 1946, responding to larger demand from all classes of domestic consumers and for export, according to the Bureau of Mines, U.S. Department of the Interior.

Production of 1,244,421,000 pounds exceeded the 1945 record by 18 percent but was below total sales that expanded 24 percent over 1945 to 1,269,740,000 pounds.

As a result, producers' stocks of black declined to 76,228,000 pounds on December 31, 1946, compared with 102,005,000 pounds at the end of 1945. Stocks of contact (channel) type blacks declined throughout the year. Furnace type stocks were built up moderately in the second and third quarters but declined in the fourth quarter.

Furnace black production gained 22 percent over 1945 to 625,312,000 pounds and was greater for the first time than that of contact type blacks - 619,109,000 pounds. Although output of the Texas Panhandle district increased to a new high of 596,678,000 pounds of black of all types, its share of the U.S. total declined to 48 percent compared with 51 in 1945 and 70 in 1941.

As the quantity of natural gas consumed in carbon black manufacture increased only 11 percent in 1946 to 478,349 million cubic feet, the average yield increased from 2.32 pounds of black per thousand cubic feet of gas used in 1945 to 2.44 pounds in 1946. The average value at the plants of gas used was 3.02 cents per thousand cubic feet in 1946 and 2.28 cents in 1945.

Sales to rubber companies increased from 804,386,000 pounds in 1945 to 941,464,000 pounds in 1946 and record quantities of black were taken by ink and paint trades. Although exports of contact types were controlled, exports of all grades increased 56 percent to the unprecedented total of 271,085,000 pounds.

The average value of carbon black at the plants increased from 4.02 cents a pound in 1945 to 4.82 cents in 1946 as prices of the principal contact grades advanced.

A total of 60 plants operated in 1946, a net gain of one over 1945. One channel plant in Texas did not produce and 2 new furnace plants (in Texas and Kansas) were put on production.

Tables prepared by H. Backus under the supervision of F. S. LOTT, Assistant Chief, Petroleum Economics Division, Economics and Statistics Branch.

Natural mineral pigments and manufactured iron oxide pigments sold by processors in the United States, 1945-46, by kinds

Pigment	1945		1946	
	Short tons	Value	Short tons	Value
Mineral blacks	2,960	$61,388	6,369	$118,171
Precipitated magnetic blacks	1/	1/	1/	1/
Natural brown oxides (metallic browns)	6,569	290,011	5,823	276,379
Vandyke brown (finished pigment)	284	52,084	1/	1/
Sap brown				
Pure browns (96 percent or better iron oxides)	1/	1/	1,018	206,806
Natural red oxides	18,051	714,856	22,436	972,405
Pure red oxides (98 percent or better Fe_2O_3)	13,347	2,457,565	17,050	3,117,706
Venetian reds	8,954	650,815	9,727	721,354
Pyrite cinder	679	42,545	964	52,471
Other red iron oxides	11,064	1,050,695	17,345	1,683,166
Natural yellow oxides (high Fe_2O_3)	1/	1/	1/	1/
Pure yellows (85 percent or better Fe_2O_3)	14,060	1,913,609	8,505	1,178,825
Ochers (low Fe_2O_3)	11,018	361,441	12,505	286,322
Siennas:				
Burnt	853	109,498	1,197	168,978
Not burnt	2,563	306,621	2,401	303,483
Umbers:				
Burnt	2,685	232,899	3,727	325,856
Not burnt	1/	1/	916	68,615
Other	7,927	581,147	5,114	523,613
	101,014	8,825,174	115,097	10,004,150

1/ Included under "Other."

The following pigment processors contributed 1946 production data given in the preceding table.

American Pigment Corporation, Pulaski, Va. (Plants at Hiwassee and Pulaski, Va.)
Blue Ridge Talc Co., Inc., P. O. Box 7, Henry, Va.
Calco Chemical Div., American Cyanamid Co., Mount Olivet Ave., Newark, N. J. (Plant at Piney River, Va.)
Clinton Metallic Paint Co., Box 278, Clinton, N. Y.
E. I. du Pont de Nemours & Company, Inc., Room 12062 du Pont Bldg., 1007 Market St., Wilmington 98, Del.
Forche & Smith, Falls Creek, Pa.
Keystone Filler & Mfg. Co., Muncy, Pa.
Magnetic Pigment Division, Columbian Carbon Co., 41 E. 42d St., New York 17, N. Y. (Plants at Trenton and Monmouth Junction, N. J.)
Geo. S. Mepham Corporation, 2001 Lynch Ave., East St. Louis, Ill.
Mineral Pigments Corporation, Washington Blvd., Muirkirk, Md.
Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul, Minn. (Plant at Copley, Ohio.)
National Aluminate Corporation, 6216 W. 66th Place, Chicago 38, Ill. (Plant at Bowman, N. Dak.)
New Riverside Ochre Co., Cartersville, Ga.
Penn Paint & Filler Co., Antes Fort, Pa.
Prince Mfg. Co., Bowmanstown, Pa.
Reichard-Coulston, Inc., 15 E. 26th St., New York 10, N. Y. (Plant at Bethlehem, Pa.)
Ricketson Mineral Color Works, 229 E. Wisconsin Ave., Milwaukee 2, Wis.
Seminole Pigment Co., Easton, Pa. (Plant at Warren, Ohio.)
Geo. B. Smith Chemical Works, Inc., Maple Park, Ill.
Solomon Grinding Service, 1116 Ridgely Bldg., Springfield, Ill.
Synthetic Iron Color Co., P. O. Box 1157, Richmond, Calif.
C. K. Williams & Co., 640 N. 13th St., Easton, Pa.
C. K. Williams & Co. of Calif., Ltd., 4650 Shellmound St., Emeryville 8, Calif.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary   R. R. SAYERS, Director

JUL 3 1947

For release June 10, 1947.

MINERAL MARKET REPORTS
No. MMS 1524

ALUMINUM SALTS AND ALUMINA IN 1946

Aluminum salts shipped in the United States in 1946 increased about 4 percent in quantity and 2 percent in value compared with 1945, according to the Bureau of Mines, United States Department of the Interior.

Aluminum salts and alumina produced and shipped in the United States, 1945-46

	1945				1946			
	Production	Shipments			Production	Shipments		
	Short tons	Shippers	Short tons	Value	Short tons	Shippers	Short tons	Value
Aluminum salts:								
Alum:								
Ammonia........	8,460	6	8,528	$579,583	7,551	5	7,391	$502,509
Potash.........	4,844	4	5,170	395,859	5,163	4	5,035	372,235
Aluminum chloride:								
Liquid.........	1/7,028	4	1/7,199	1/274,524	7,374	4	6,748	252,491
Crystal........	21,036	3	20,892	2,929,033	17,812	3	17,726	2,584,133
Anhydrous......		7				6		
Aluminum sulfate:								
Commercial:								
General......	545,209	19	540,030	11,825,418	568,345	18	569,435	12,491,270
Municipal....	12,062	8	12,011	236,729	11,982	8	12,268	228,184
Iron free......	29,731	6	29,400	1,053,104	32,791	6	30,730	1,063,299
Sodium aluminum sulfate........	28,842	2	28,943	1,892,509	29,903	2	30,323	2,015,360
Sodium aluminate.		12				10		
Total aluminum salts........	657,212	-	652,173	19,186,759	680,921	--	679,656	19,509,481
Alumina 2/.........	65,117	10	66,895	5,187,433	71,281	9	73,661	6,168,752

1/ Revised figures.

2/ Excludes alumina produced for use in making aluminum; includes activated, calcined, crude, light and heavy hydrate, converted to a calcined alumina equivalent.

Prepared by C. E. Nighman and Mary E. Trought, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Producers of aluminum salts reported the shipment of 679,656 short tons valued at $19,509,481 in 1946 compared with 652,173 tons valued at $19,186,759 in 1945. Shipments of aluminum sulfate, the principal product of the aluminum salts industry, totaled 612,433 tons in 1946 compared with 581,441 tons in 1945, an increase of 5 percent. Decreases were noted in the production of sodium aluminum sulfate, anhydrous aluminum chloride, and ammonia alum, and increases in the production of potash alum, sodium aluminate, liquid and crystal aluminum chloride.

Manufacturers of aluminum salts and alumina for the chemical and other industries reported the consumption of approximately 169,009 long tons of domestic bauxite (on an as shipped basis) valued at $1,807,683 and 93,266 tons of imported bauxite valued at $1,394,648. In addition the consumption of the following raw materials was reported by aluminum salts producers: 19,882 short tons of aluminum trihydrate, 11,977 tons of secondary aluminum, 72,329 tons of clay, some bichromate residue and a small quantity of alunite.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

For release July 23, 1947.

MINERAL MARKET REPORT
MMS No. 1525

POTASH INDUSTRY OF THE UNITED STATES IN 1946

Still More New Records in Potash

More new records were made in 1946 in the potash industry of the United States, both production of marketable potassium salts and sales reaching new highs, according to the Bureau of Mines, United States Department of the Interior. Production in 1946 was 1,687,735 short tons of potassium salts containing 931,812 tons of equivalent potash (K_2O). This was an increase of 99,430 tons of potassium salts over 1945, and 57,569 tons of K_2O. The production of marketable potassium salts in the United States has increased each year since 1934. Sales (1,673,249 tons) were 76,089 tons greater in 1946 than in 1945, and contained 928,374 tons K_2O. The value of the sales in 1946 was over 32 million dollars. The average value per ton of the potassium salts sold in 1946 was $19.23, slightly higher than that of 1945. Stocks of potassium salts in producers' hands at the end of 1946 were larger than in 1945. Exports of fertilizer potash materials continued to decline, whereas those for chemical uses were considerably larger. Imports of potash materials for fertilizer purposes increased in 1946, but those of chemical materials decreased. Domestic consumption of potash again made a new high record - actual sales for consumption reaching 862,532 tons according to the American Potash Institute.

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Production of both grades of muriate of potash and of sulfate of potash and sulfate of potash-magnesia were larger in 1946 than in 1945. Production of manure salts (98,333 tons), however, even with the inclusion of spillage of higher grade salts, continued in 1946 the decline which began in 1944, and now is much less than half of the 1943 production of 242,189 short tons.

The Western States production remains the dominant factor in the domestic potash industry. California, New Mexico, and Utah, furnished virtually all of the 1946 output, the larger part coming from the deeply buried Permian saline sedimentary deposits of sylvite and langbeinite of the Carlsbad region of southeastern New Mexico. The Eastern States supplied only a small quantity---from well brines in Michigan and as a by-product of cement operations in Maryland.

Prepared by Bertrand L. Johnson and D. I. Marsh, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics & Statistics Branch.

Salient statistics of the potash industry in the United States, 1944-46

	1944	1945	1946
Production:			
Potassium salts (marketable)------short tons	1,578,498	1,588,305	1,687,735
Approximate equivalent, K_2O----------do----	834,568	874,243	931,812
Sales by producers:			
Potassium salts------------------------do----	1,543,420	1,597,160	1,673,249
Approximate equivalent, K_2O----------do----	817,892	870,370	928,374
Value at plant--------------------------------	$29,487,413	$30,313,919	$32,175,716
Average per ton----------------------------	$19.11	$18.98	$19.23
Imports:			
Fertilizer materials--------------short tons	13,739	6,885	8,376
Approximate equivalent, K_2O----------do----	3,760	3,871	2,665
Value--	$397,575	$230,714	$257,184
Chemical materials----------------short tons	5,402	10,327	8,327
Approximate equivalent, K_2O----------do----	1,108	2,152	1,801
Value--	$1,650,776	$3,079,761	$2,100,915
Exports:			
Fertilizer materials--------------short tons	110,057	104,687	96,822
Approximate equivalent, K_2O 1/--------do----	61,312	58,310	53,930
Value--	$3,139,631	$2,986,990	$2,983,751
Chemical materials----------------short tons	15,444	18,966	23,905
Approximate equivalent, K_2O 1/--------do----	7,568	9,273	11,713
Value--	$3,142,096	$3,648,795	$5,055,441
Consumption:			
Apparent consumption: 2/			
Potassium salts-------------------short tons	1,437,060	1,490,719	1,569,225
Approximate equivalent, K_2O---------do----	753,880	808,809	867,197
Actual sales for consumption:			
Approximate equivalent, K_2O----------do----	752,319	807,038	862,532
Producers' stocks:			
Approximate equivalent, K_2O-------short tons	29,763	34,253	37,999

1/ Estimate by Bureau of Mines.
2/ Quantity sold by producers, plus imports, minus exports.

Potassium salts produced in the United States, 1944-46, by grades, in short tons

Grade	1944	1945	1946
Muriate of potash:			
60-62 percent K_2O minimum 1/-----------------	1,082,132	1,258,332	2/1,346,699
48-50 percent K_2O minimum--------------------	114,550	117,677	122,257
Manure salts------------------------------------	217,560	115,798	3/98,333
Sulfate of potash and sulfate of potash-magnesia	164,256	96,498	120,446
	1,578,498	1,588,305	1,687,735

1/ Includes refined potash.
2/ Includes some 93-96 percent KCl.
3/ Includes spillage of some higher-grade salts.

The potash-producing companies in the United States in 1946, by States, were as follows:

California:

The American Potash & Chemical Corp., 122 East Forty-second St., New York, N. Y. (plant at Trona, on Searles Lake, Calif.).

Maryland:

North American Cement Corp., 41 East Forty-second St., New York, N. Y. (plant at Security, Md.)

Michigan:

The Dow Chemical Company, Midland, Michigan. (Brine wells and plant near Midland, Michigan).

New Mexico:

International Minerals & Chemical Corp., 20 North Wacker Drive, Chicago, Ill. (Mine and plant near Carlsbad, New Mexico).

Potash Company of America, Carlsbad, N. Mex., (Mine and plant near Carlsbad, New Mexico).

United States Potash Co., Inc., 30 Rockefeller Plaza, New York, N. Y. (Mine and plant near Carlsbad, New Mexico).

Utah:

Bonneville, Ltd., 540 West Seventh South, Salt Lake City, Utah. (Plant near Wendover, Utah).

Max Krotki, Marysvale, Utah. (Alunite opencut operations at Marysvale, Utah).

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

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FOR RELEASE July 1947

MINERAL MARKET REPORT
M. M. S. No. 1526

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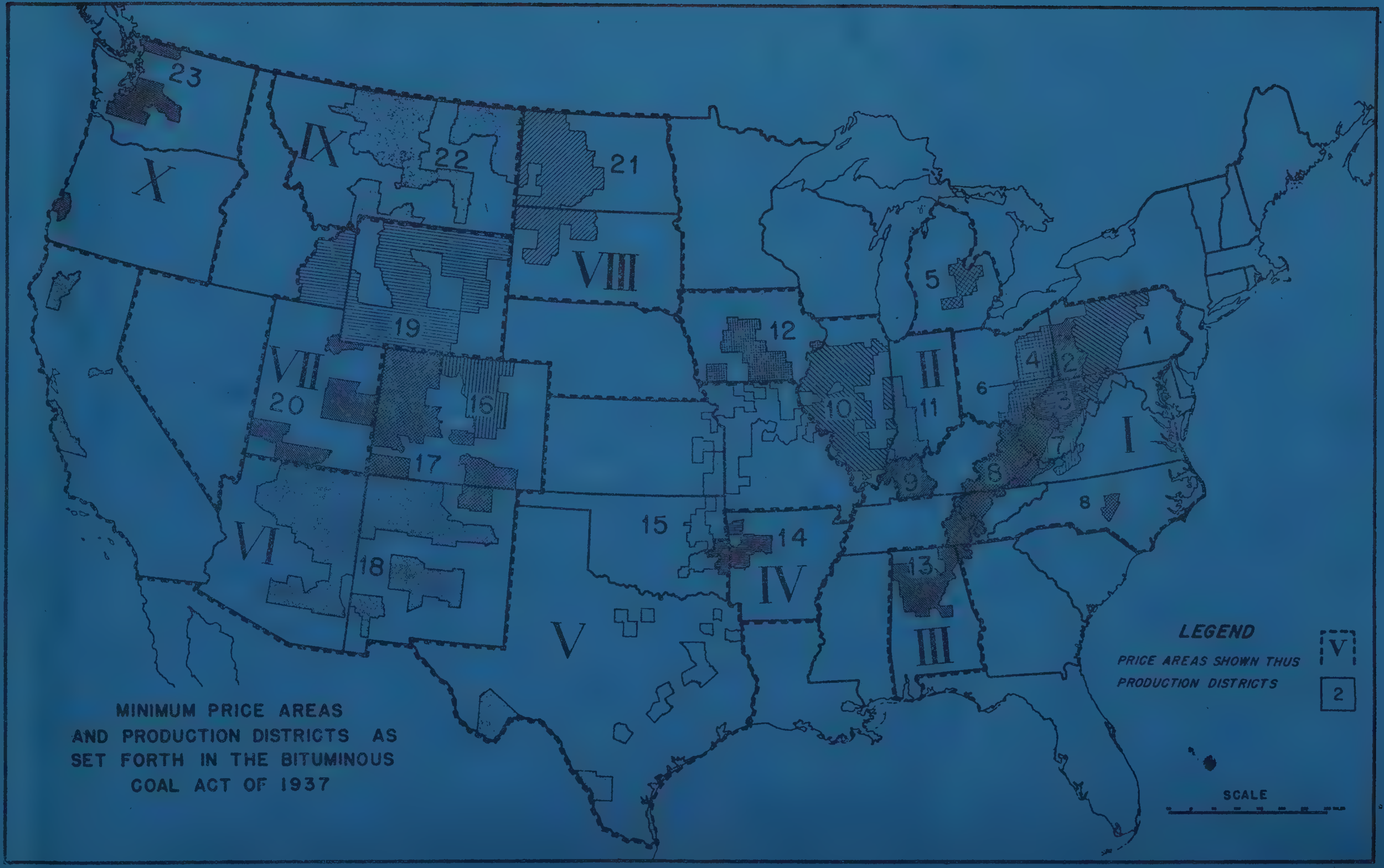
UNIVERSITY OF ILLINOIS

THICKNESS OF BITUMINOUS-COAL AND LIGNITE SEAMS MINED IN THE UNITED STATES IN 1945

Prepared by W. H. Young and R. L. Anderson under the supervision of T. W. Hunter, Chief, Coal Economics Division, Economics and Statistics Branch.



MINIMUM PRICE AREAS AND PRODUCTION DISTRICTS AS SET FORTH IN THE BITUMINOUS COAL ACT OF 1937

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PRICE AREAS SHOWN THUS V
PRODUCTION DISTRICTS 2
SCALE
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THICKNESS OF BITUMINOUS-COAL AND LIGNITE SEAMS MINED IN THE UNITED STATES IN 1945

The average thickness of the coal seams mined in the United States has not changed materially in the past 25 years. The average seam thickness for all mines was 63 inches in 1920 1/ and 65 inches in 1945. As thick seams have been exhausted in the older fields, other thick seams have been opened in the newer fields. Bituminous coal is mined today from an exceedingly wide range of thicknesses, from less than 2 feet to more than 50 feet; however, a large majority of the mines are producing coal from seams 3 to 6 feet thick.

The coal seam of moderate thickness presents the least mining difficulties. Any decided thinning limits production, decreases recovery, and, therefore, increases cost. Thickening of the seam in underground mining also has the same effect, for, as the seam increases in thickness, it becomes necessary to maintain larger pillars, timbering becomes more difficult and finally impracticable, and roof control is almost impossible. The limited information available indicates that, for maximum recovery in underground bituminous-coal mines, the ideal thickness of seam lies between 6 and 8 feet. 2/

A survey of bituminous-coal mines for 1920 showed that 25 percent of the total United States production came from seams less than 4 feet thick, 45 percent from seams 4 to 6 feet thick, 25 percent from seams 6 to 8 feet thick, and 5 percent from seams over 8 feet. A similar survey for 1945 showed 31 percent of output from seams under 4 feet thick, 37 percent from seams 4 to 6 feet thick, 23 percent from seams 6 to 8 feet thick, and 9 percent from seams over 8 feet thick. Table 1 shows the number and production of bituminous-coal and lignite mines classified by one-foot intervals of seam thickness mined in 1920 and 1945.

The 1945 data included in the following tables were compiled from annual reports of production and mine operation, calendar year 1945, submitted by bituminous-coal and lignite producers to the Bureau of Mines. Estimates were made for seam thicknesses which were not specified by the producer. Data for 1920 were compiled from the Report of the United States Coal Commission, Part 3, Table II, facing page 1890.

Figure 1 shows the percentage of bituminous coal produced by thickness of seams mined in the ten largest coal-producing States and total United States in 1945. The States are arranged in order of the percent of output mined from seams less than four feet thick.

1/ Mechanization, Employment and Output per Man in Bituminous-coal Mining, W.P.A. National Research Project, vol. I, p. 62.

2/ Report of United States Coal Commission, Part 2, pp. 655-6, 1922.

Table 2 shows 1945 data on productivity and average thickness of seams mined at strip and underground mines, by States. The correlation between thickness of seam and productivity was not universal; instead, in a number of States and districts, large productivity was achieved in thin seams. Conversely, several districts and States had low productivity in thick seams. The average thickness of seams mined at strip mines in the 24 States varied from 1.5 feet in Georgia to 25.0 feet in Montana. Underground bituminous-coal and lignite mines were operated in 27 States and Alaska in 1945 and the average thickness of seams mined varied from 1.6 feet in Georgia to 13.7 feet in North Dakota. Table 3 shows data by Coal Act Districts similar to that shown by States in table 2.

Table 4 shows number of mines and production data of underground bituminous-coal and lignite mines, classified by thickness of seams mined in each State in 1945. Similar data for strip mines and total all mines are included in tables 5 and 6, respectively.

Table 7 shows number of mines and production data of underground bituminous-coal and lignite mines, classified by thickness of seams mined in each Bituminous Coal Act District in 1945. Similar data for strip mines and total all mines are included in tables 8 and 9, respectively.

Table 10 shows number of mines and production data of bituminous-coal and lignite mines classified by size of output and thickness of seams mined in 1920 and 1945.

TABLE 1. - NUMBER AND PRODUCTION OF BITUMINOUS COAL AND LIGNITE MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN 1920 AND 1945

(Exclusive of mines producing less than 1,000 tons)

Thickness of seams mined	1920				1945			
	Mines		Production		Mines		Production	
	Number	Percent	Thousands of net tons	Percent	Number	Percent	Thousands of net tons	Percent
Less than 2 feet	139	1.6	2,481	0.4	126	1.8	6,869	1.2
2 to 3 feet	1,159	13.0	31,353	5.6	936	13.3	32,984	5.7
3 to 4 feet	2,240	25.2	104,356	18.5	2,250	32.0	138,781	24.0
4 to 5 feet	1,792	20.1	126,372	22.4	1,710	24.3	136,348	23.6
5 to 6 feet	1,222	13.7	125,589	22.3	838	11.9	75,132	13.0
6 to 7 feet	559	6.3	76,255	13.5	587	8.4	83,738	14.5
7 to 8 feet	393	4.4	63,333	11.2	260	3.7	51,212	8.9
8 feet and over	242	2.7	27,852	5.0	326	4.6	52,553	9.1
Unspecified	1,161	13.0	6,165	1.1	—	—	—	—
Total	8,907	100.0	563,756	100.0	7,033	100.0	577,617	100.0

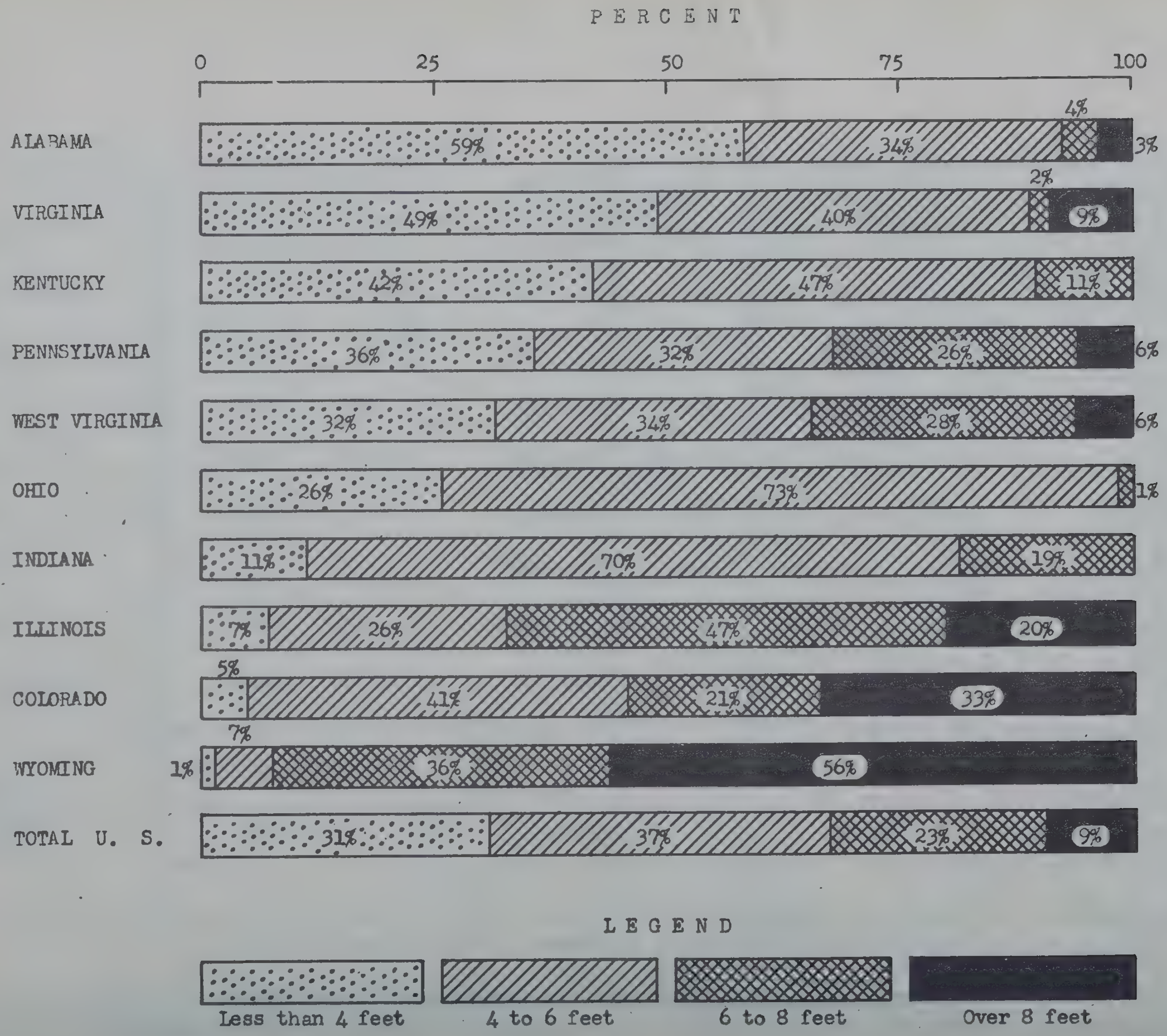

Figure 1. - Percentage of bituminous coal and lignite produced in the ten largest coal-producing States and total United States, by thickness of seams mined in 1945.

TABLE 2. - NUMBER OF MINES, PRODUCTION, OUTPUT PER MAN PER DAY, AND AVERAGE THICKNESS OF SEAMS MINED, AT STRIP AND UNDERGROUND BITUMINOUS COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES, IN 1945

(Exclusive of mines producing less than 1,000 tons)

State	Strip mines				Underground mines				Total all mines			
	Number of mines	Production (net tons)	Average tons per man per day	Average thickness coal mined (feet)	Number of mines	Production (net tons)	Average tons per man per day	Average thickness coal mined (feet)	Number of mines	Production (net tons)	Average tons per man per day	Average thickness coal mined (feet)
Alabama	53	1,890,819	8.29	3.7	324	16,345,720	3.01	4.0	377	18,236,539	3.22	3.9
Alaska	—	—	—	—	5	297,644	2.95	10.6	5	297,644	2.95	10.6
Arizona	—	—	—	—	1	3,853	1.80	5.5	1	3,853	1.80	5.5
Arkansas	23	671,824	8.37	3.9	44	1,182,102	2.72	2.7	67	1,853,926	3.60	3.1
Colorado	5	52,811	7.51	14.8	161	7,568,201	4.52	7.2	166	7,621,012	4.53	7.3
Georgia	1	10,221	5.84	1.5	2	32,347	1.54	1.6	3	42,568	1.87	1.6
Illinois	43	16,909,100	18.52	4.9	270	56,102,092	7.85	7.2	313	73,011,192	9.06	6.7
Indiana	61	13,464,089	15.89	4.4	73	11,718,522	7.79	5.7	134	25,182,611	10.71	5.0
Iowa	23	521,058	8.28	4.9	94	1,524,542	3.39	4.7	117	2,045,600	3.99	4.7
Kansas	29	2,955,500	13.01	1.6	22	273,059	1.86	2.7	51	3,228,559	8.63	1.7
Kentucky	48	6,694,839	19.00	5.8	1,393	62,898,097	4.84	4.2	1,441	69,592,936	5.22	4.4
Maryland	10	217,526	8.49	11.0	84	1,545,177	3.68	4.7	94	1,762,703	3.95	5.4
Michigan	—	—	—	—	3	125,704	2.71	3.2	3	125,704	2.71	3.2
Missouri	36	3,492,302	14.74	2.6	50	490,422	2.32	3.0	86	3,982,724	8.88	2.7
Montana (bit. and lig.)	2	2,556,341	78.92	25.0	31	1,910,447	7.04	5.8	33	4,466,788	14.70	16.8
New Mexico	1	1,480	2.24	5.5	25	1,482,206	4.19	5.3	26	1,483,686	4.19	5.3
North Dakota (lignite)	30	1,859,674	19.06	10.3	23	662,645	8.99	13.7	53	2,522,319	14.73	11.2
Ohio	172	13,483,789	16.08	4.1	363	19,253,646	5.25	4.5	535	32,737,435	7.27	4.3
Oklahoma	18	1,628,418	12.51	2.2	58	1,280,558	3.46	3.6	76	2,908,976	5.82	2.8
Oregon	—	—	—	—	1	16,500	2.32	4.5	1	16,500	2.32	4.5
Pennsylvania	598	27,707,670	14.10	4.2	1,359	105,257,673	4.64	5.2	1,957	132,965,343	5.39	5.0
South Dakota (lignite)	2	21,412	6.61	4.7	2	3,033	4.74	7.5	4	24,445	6.30	5.0
Tennessee	8	206,463	9.65	2.8	132	6,064,245	3.95	3.7	140	6,270,708	4.03	3.7
Texas (lignite)	1	79,949	19.52	12.0	—	—	—	—	1	79,949	19.52	12.0
Utah	—	—	—	—	52	6,679,063	6.18	11.8	52	6,679,063	6.18	11.8
Virginia	8	308,890	14.15	5.0	137	16,926,103	4.18	4.6	145	17,234,993	4.23	4.6
Washington	6	151,811	7.35	8.8	40	1,205,433	3.39	5.8	46	1,357,244	3.61	6.1
West Virginia	186	14,246,255	15.18	6.5	872	137,788,477	5.23	5.1	1,058	152,034,732	5.57	5.2
Wyoming	6	854,624	15.48	23.1	42	8,992,951	6.50	11.8	48	9,847,575	6.84	12.8
Total	1,370	109,986,865	15.46	5.3	5,663	467,630,462	5.04	5.4	7,033	577,617,327	5.78	5.4

TABLE 3. – NUMBER OF MINES, PRODUCTION, OUTPUT PER MAN PER DAY, AND AVERAGE THICKNESS OF SEAMS MINED, AT STRIP AND UNDERGROUND BITUMINOUS COAL AND LIGNITE MINES IN THE UNITED STATES, BY DISTRICTS, IN 1945

(Districts as defined in the Bituminous Coal Act of 1937 and modifications thereto. Exclusive of mines producing less than 1,000 tons)

District	Strip mines				Underground mines				Total all mines			
	Number of mines	Production (net tons)	Average tons per man per day	Average thickness coal mined (feet)	Number of mines	Production (net tons)	Average tons per man per day	Average thickness coal mined (feet)	Number of mines	Production (net tons)	Average tons per man per day	Average thickness coal mined (feet)
1. Eastern Pennsylvania	336	13,630,115	12.23	3.7	950	43,116,287	4.19	3.8	1,286	56,746,402	4.97	3.8
2. Western Pennsylvania	277	14,697,667	16.22	4.9	513	64,370,317	4.96	6.2	790	79,067,984	5.69	6.0
3. Northern West Virginia	130	10,810,908	15.67	6.9	281	34,155,311	6.23	6.5	411	44,966,219	7.29	6.6
4. Ohio	172	13,483,789	16.08	4.1	363	19,253,646	5.25	4.5	535	32,737,435	7.27	4.3
5. Michigan	—	—	—	—	3	125,704	2.71	3.2	3	125,704	2.71	3.2
6. Panhandle	13	949,818	17.36	4.5	25	3,659,221	5.00	4.7	38	4,609,039	5.86	4.7
7. Southern Numbered 1	32	1,706,468	12.44	4.2	261	54,300,063	4.44	4.6	293	56,006,531	4.53	4.6
8. Southern Numbered 2	35	1,691,068	12.37	4.5	1,547	115,057,670	4.83	4.3	1,582	116,748,738	4.88	4.3
9. West Kentucky	33	5,807,711	20.88	5.9	335	14,636,661	6.94	5.1	368	20,444,372	8.56	5.4
10. Illinois	43	16,909,100	18.52	4.9	270	56,102,092	7.85	7.2	313	73,011,192	9.06	6.7
11. Indiana	61	13,464,089	15.89	4.4	73	11,718,522	7.79	5.7	134	25,182,611	10.71	5.0
12. Iowa	23	521,058	8.28	4.9	94	1,524,542	3.39	4.7	117	2,045,600	3.99	4.7
13. Southeastern	56	1,988,928	8.38	3.7	391	17,562,309	3.01	3.9	447	19,551,237	3.22	3.9
14. Arkansas-Oklahoma	26	731,027	8.20	3.8	67	1,530,104	2.71	2.9	93	2,261,131	3.45	3.2
15. Southwestern	81	8,096,966	13.74	2.3	107	1,696,037	2.84	3.2	188	9,793,003	8.25	2.5
16. Northern Colorado	2	10,896	6.65	35.3	29	2,339,708	5.58	7.7	31	2,350,604	5.58	7.8
17. Southern Colorado	3	41,915	7.78	9.0	136	6,323,927	4.28	6.7	139	6,365,842	4.29	6.7
18. New Mexico	1	1,480	2.24	5.5	22	390,625	2.92	5.1	23	392,105	2.92	5.1
19. Wyoming	6	854,624	15.48	23.1	42	8,992,951	6.50	11.8	48	9,847,575	6.84	12.8
20. Utah	—	—	—	—	52	6,679,063	6.18	11.8	52	6,679,063	6.18	11.8
21. North-South Dakota (lignite) ..	32	1,881,086	18.66	10.2	25	665,678	8.96	13.6	57	2,546,764	14.54	11.1
22. Montana	2	2,556,341	78.92	25.0	31	1,910,447	7.04	5.8	33	4,466,788	14.70	16.8
23. Washington and Alaska	6	151,811	7.35	8.8	46	1,519,577	3.28	6.7	52	1,671,388	3.45	6.9
Total	1,370	109,986,865	15.46	5.3	5,663	467,630,462	5.04	5.4	7,033	577,617,327	5.78	5.4

TABLE 4. - NUMBER AND PRODUCTION OF BITUMINOUS-COAL AND LIGNITE UNDERGROUND MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN EACH STATE, IN 1945

(Exclusive of mines producing less than 1,000 tons)

State	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Total	
	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)
Alabama	3	97,947	0.6	173	4,281,371	26.2	92	4,907,237	30.0	42	5,303,725	32.5	6	560,974	3.4	5	673,283	4.1	—	—	—	3	521,183	3.2	324	16,345,720
Alaska	—	—	—	—	—	—	—	—	—	1	(1)	—	3	131,668	44.2	—	—	—	—	—	—	1	(1)	—	5	297,644
Arizona	—	—	—	—	—	—	—	—	—	—	—	—	1	3,853	100.0	—	—	—	—	—	—	—	—	—	1	3,853
Arkansas	11	331,450	28.0	13	414,184	35.0	15	378,098	32.0	2	(1)	—	—	—	—	3	(1)	—	—	—	—	—	—	—	44	1,182,102
Colorado	2	6,101	.1	2	11,949	.2	14	350,845	4.6	28	1,773,059	23.4	41	1,342,782	17.7	22	811,806	10.7	12	762,679	10.1	40	2,508,980	33.2	161	7,568,201
Georgia	1	29,347	90.7	1	3,000	9.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	32,347
Illinois	—	—	—	—	—	—	15	361,708	.6	83	4,324,443	7.7	68	6,735,772	12.0	56	12,102,554	21.6	29	18,016,338	32.1	19	14,561,277	26.0	270	56,102,092
Indiana	—	—	—	—	—	—	8	98,151	.8	35	2,472,181	21.1	20	4,717,088	40.3	10	4,431,102	37.8	—	—	—	—	—	—	73	11,718,522
Iowa	1	5,046	.3	25	266,733	17.5	17	160,491	10.5	24	486,092	31.9	17	319,711	21.0	7	179,895	11.8	3	106,574	7.0	—	—	—	94	1,524,542
Kansas	6	74,170	27.2	11	81,925	30.0	5	116,964	42.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22	273,059
Kentucky	2	40,902	.1	148	3,062,294	4.9	536	24,761,190	39.4	501	24,997,144	39.7	156	6,002,723	9.5	42	3,502,994	5.6	6	515,100	.8	2	15,750	(2)	1,393	62,898,097
Maryland	3	5,567	.4	27	294,937	19.1	19	780,976	50.5	5	15,154	1.0	6	76,930	5.0	2	21,663	1.4	4	105,060	6.8	18	244,890	15.8	84	1,545,177
Michigan	—	—	—	2	32,676	26.0	1	93,028	74.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	125,704
Missouri	15	79,054	16.1	11	135,084	27.6	14	217,426	44.3	9	57,339	11.7	1	1,519	.3	—	—	—	—	—	—	—	—	—	50	490,422
Montana (bit. and lig.) ..	1	1,443	.1	—	—	—	2	9,009	.5	5	546,296	28.6	3	641,967	33.6	13	666,361	34.9	2	(1)	—	5	(1)	—	31	1,910,447
New Mexico	—	—	—	—	—	—	3	41,331	2.8	10	219,977	14.8	8	1,211,307	81.7	2	5,240	.4	1	(1)	—	1	(1)	—	25	1,482,206
North Dakota (lignite) ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3,927	.6	3	10,003	1.5	18	648,715	97.9	23	662,645
Ohio	1	2,441	(2)	18	370,097	1.9	151	3,244,218	16.9	124	11,281,295	58.6	46	4,043,567	21.0	16	277,448	1.4	5	31,800	.2	2	2,780	(2)	363	19,253,646
Oklahoma	3	(1)	—	7	46,605	3.6	23	923,465	72.1	19	190,898	14.9	5	35,781	2.8	1	(1)	—	—	—	—	—	—	—	58	1,280,558
Oregon	—	—	—	—	—	—	—	—	—	1	16,500	100.0	—	—	—	—	—	—	—	—	—	—	—	—	1	16,500
Pennsylvania	8	814,983	.8	144	2,585,459	2.5	546	30,391,740	28.8	241	13,673,293	13.0	195	18,276,407	17.4	154	24,347,713	23.1	51	7,780,852	7.4	20	7,387,226	7.0	1,359	105,257,673
South Dakota (lignite) ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3,033	100.0	—	—	—	2	3,033
Tennessee	1	(1)	—	17	984,507	16.2	90	3,567,520	58.8	18	925,790	15.3	4	319,306	5.3	2	(1)	—	—	—	—	—	—	—	132	6,064,245
Utah	—	—	—	—	—	—	5	191,954	2.9	5	128,890	1.9	4	340,141	5.1	5	677,351	10.2	7	463,776	6.9	26	4,876,951	73.0	52	6,679,063
Virginia	1	(1)	—	15	760,836	4.5	57	7,476,648	44.2	27	3,601,524	21.3	27	3,276,983	19.4	5	294,298	1.7	1	(1)	—	4	1,411,438	8.3	137	16,926,103
Washington	—	—	—	3	105,385	8.7	5	27,226	2.3	12	562,405	46.7	2	43,854	3.6	6	210,103	17.4	4	118,089	9.8	8	138,371	11.5	40	1,205,433
West Virginia	—	—	—	63	7,197,159	5.2	275	39,322,610	28.5	229	30,567,507	22.2	109	17,696,104	12.9	89	22,645,334	16.4	61	13,699,306	10.0	46	6,660,457	4.8	872	137,788,477
Wyoming	—	—	—	—	—	—	4	124,847	1.4	6	261,570	2.9	3	374,133	4.2	5	524,202	5.8	6	2,767,159	30.8	18	4,941,040	54.9	42	8,992,951
Undistributed	—	96,350	—	—	—	—	—	—	—	—	97,537	—	—	—	—	—	280,760	—	—	107,861	—	—	146,867	—	—	—
Total	59	1,584,801	.4	680	20,634,201	4.4	1,897	117,546,682	25.1	1,427	101,502,619	21.7	725	66,152,570	14.2	447	71,656,034	15.3	197	44,487,630	9.5	231	44,065,925	9.4	5,663	467,630,462

1/ Included in "Undistributed".
2/ Less than 0.05 percent.

TABLE 5. - NUMBER AND PRODUCTION OF BITUMINOUS-COAL AND LIGNITE STRIP MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN EACH STATE IN 1945

(Exclusive of mines producing less than 1,000 tons)

State	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Total	
	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)
Alabama	1	2,707	0.2	27	869,910	46.0	15	542,824	28.7	5	242,807	12.8	3	123,711	6.5	—	—	—	—	—	—	2	108,860	5.8	53	1,890,819
Arkansas	5	156,146	23.2	8	141,945	21.1	2	42,268	6.3	3	136,539	20.3	1	26,578	4.0	3	149,901	22.3	1	18,447	2.8	—	—	—	23	671,824
Colorado	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	14,028	26.6	—	—	—	4	38,783	73.4	5	52,811
Georgia	1	10,221	100.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	10,221
Illinois	2	115,745	.7	3	564,387	3.3	7	4,120,891	24.4	13	5,564,113	32.9	5	2,048,117	12.1	10	3,905,008	23.1	1	515,287	3.1	2	75,552	.4	43	16,909,100
Indiana	1	(1)	—	11	862,865	6.4	16	1,823,154	13.5	22	9,523,097	70.7	7	953,831	7.1	3	183,720	1.4	1	(1)	—	—	—	—	61	13,464,089
Iowa	—	—	—	—	—	—	5	41,289	7.9	12	320,159	61.4	2	60,213	11.6	4	99,397	19.1	—	—	—	—	—	—	23	521,058
Kansas	22	2,621,167	88.7	1	(1)	—	5	50,275	1.7	1	(1)	—	—	—	—	—	—	—	—	—	—	—	—	—	29	2,955,500
Kentucky	1	82,000	1.2	7	231,774	3.5	14	983,948	14.7	7	578,527	8.6	8	1,366,125	20.4	9	2,049,371	30.6	1	(1)	—	1	(1)	—	48	6,694,839
Maryland	—	—	—	1	(1)	—	1	(1)	—	—	—	—	—	—	—	—	—	—	—	—	—	8	209,994	96.5	10	217,526
Missouri	11	593,028	17.0	16	1,796,849	51.4	9	1,102,425	31.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36	3,492,302
Montana (bit. and lig.) .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1,133	(2)	—	—	—	1	2,555,208	100.0	2	2,556,341
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—	1	1,480	100.0	—	—	—	—	—	—	—	—	—	1	1,480
North Dakota (lignite) ..	—	—	—	—	—	—	1	(1)	—	2	13,880	.7	1	(1)	—	6	26,037	1.4	4	221,727	11.9	16	1,595,253	85.8	30	1,859,674
Ohio	1	(1)	—	38	1,943,839	14.4	58	2,847,736	21.1	64	8,116,547	60.2	6	401,474	3.0	3	154,062	1.1	1	(1)	—	1	(1)	—	172	13,483,789
Oklahoma	8	978,160	60.1	4	295,009	18.1	3	156,072	9.6	3	199,177	12.2	—	—	—	—	—	—	—	—	—	—	—	—	18	1,628,418
Pennsylvania	13	668,372	2.4	129	4,734,493	17.1	183	8,003,746	28.9	116	8,421,897	30.4	58	2,540,144	9.1	53	1,991,877	7.2	27	741,188	2.7	19	605,953	2.2	598	27,707,670
South Dakota (lignite) ..	—	—	—	—	—	—	—	—	—	1	(1)	—	1	(1)	—	—	—	—	—	—	—	—	—	—	2	21,412
Tennessee	1	41,162	19.9	2	64,733	31.4	5	100,568	48.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	206,463
Texas (lignite)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	79,949	100.0	1	79,949
Virginia	—	—	—	2	162,468	52.6	2	(1)	—	1	(1)	—	—	—	—	1	13,969	4.5	—	—	—	2	82,209	26.6	8	308,890
Washington	—	—	—	1	44,301	29.2	—	—	—	1	44,112	29.0	—	—	—	—	—	—	—	—	—	4	63,398	41.8	6	151,811
West Virginia	—	—	—	6	378,719	2.7	27	1,378,826	9.7	32	1,623,714	11.4	20	1,451,529	10.2	45	3,234,052	22.7	27	3,880,585	27.2	29	2,298,830	16.1	186	14,246,255
Wyoming	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	259,950	30.4	—	—	—	5	594,674	69.6	6	854,624
Undistributed	—	14,960	—	—	258,857	—	—	40,554	—	—	60,825	—	—	5,787	—	—	—	—	—	1,347,180	—	—	178,507	—	—	—
Total	67	5,283,668	4.8	256	12,350,149	11.2	353	21,234,576	19.3	283	34,845,394	31.7	113	8,978,989	8.2	140	12,082,505	11.0	63	6,724,414	6.1	95	8,487,170	7.7	1,370	109,986,865

1/ Included in "Undistributed".
2/ Less than 0.05 percent.

TABLE 6. - NUMBER AND PRODUCTION OF ALL BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN EACH STATE, IN 1945

(Exclusive of mines producing less than 1,000 tons)

State	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Total	
	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)
Alabama	4	100,654	0.6	200	5,151,281	28.2	107	5,450,061	29.9	47	5,546,532	30.4	9	684,685	3.8	5	673,283	3.7	—	—	—	5	630,043	3.4	377	18,236,539
Alaska	—	—	—	—	—	—	—	—	—	1	(1)	—	3	131,668	44.2	—	—	—	—	—	—	1	(1)	—	5	297,644
Arizona	—	—	—	—	—	—	—	—	—	—	—	—	1	3,853	100.0	—	—	—	—	—	—	—	—	—	1	3,853
Arkansas	16	487,596	26.3	21	556,129	30.0	17	420,366	22.7	5	(1)	—	1	26,578	1.4	6	(1)	—	1	18,447	1.0	—	—	—	67	1,853,926
Colorado	2	6,101	.1	2	11,949	.2	14	350,845	4.6	28	1,773,059	23.3	41	1,342,782	17.6	23	825,834	10.8	12	762,679	10.0	44	2,547,763	33.4	166	7,621,012
Georgia	2	39,568	93.0	1	3,000	7.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	42,568
Illinois	2	115,745	.2	3	564,387	.8	22	4,482,599	6.1	96	9,888,556	13.5	73	8,783,889	12.0	66	16,007,562	21.9	30	18,531,625	25.4	21	14,636,829	20.1	313	73,011,192
Indiana	1	(1)	—	11	862,865	3.4	24	1,921,305	7.6	57	11,995,278	47.6	27	5,670,919	22.5	13	4,614,822	18.3	1	(1)	—	—	—	—	134	25,182,611
Iowa	1	5,046	.2	25	266,733	13.0	22	201,780	9.9	36	806,251	39.4	19	379,924	18.6	11	279,292	13.7	3	106,574	5.2	—	—	—	117	2,045,600
Kansas	28	2,695,337	83.5	12	(1)	—	10	167,239	5.2	1	(1)	—	—	—	—	—	—	—	—	—	—	—	—	—	51	3,228,559
Kentucky	3	122,902	.2	155	3,294,068	4.7	550	25,745,138	37.0	508	25,575,671	36.8	164	7,368,848	10.6	51	5,552,365	8.0	7	(1)	—	3	(1)	—	1,441	69,592,936
Maryland	3	5,567	.3	28	(1)	—	20	(1)	—	5	15,154	.9	6	76,930	4.4	2	21,663	1.2	4	105,060	6.0	26	454,684	25.8	94	1,762,703
Michigan	—	—	—	2	32,676	26.0	1	93,028	74.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	125,704
Missouri	26	672,082	16.9	27	1,931,933	48.5	23	1,319,851	33.1	9	57,339	1.4	1	1,519	1	—	—	—	—	—	—	—	—	—	86	3,982,724
Montana (bit. and lig.)	1	1,443	(2)	—	—	—	2	9,009	.2	5	546,296	12.2	3	641,967	14.4	14	667,494	14.9	2	(1)	—	6	(1)	—	33	4,466,788
New Mexico	—	—	—	—	—	—	3	41,331	2.8	10	219,977	14.8	9	1,212,787	81.7	2	5,240	.4	1	(1)	—	1	(1)	—	26	1,483,686
North Dakota (lignite)	—	—	—	—	—	—	1	(1)	—	2	13,880	.6	1	(1)	—	8	29,964	1.2	7	231,730	9.2	34	2,243,968	89.0	53	2,522,319
Ohio	2	(1)	—	56	2,313,936	7.1	209	6,091,954	18.6	188	19,397,842	59.3	52	4,445,041	13.6	19	431,510	1.3	6	(1)	—	3	(1)	—	535	32,737,435
Oklahoma	11	(1)	—	11	341,614	11.7	26	1,079,537	37.1	22	390,075	13.4	5	35,781	1.2	1	(1)	—	—	—	—	—	—	—	76	2,908,976
Oregon	—	—	—	—	—	—	—	—	—	1	16,500	100.0	—	—	—	—	—	—	—	—	—	—	—	—	1	16,500
Pennsylvania	21	1,483,355	1.1	273	7,319,952	5.5	729	38,395,486	28.9	357	22,095,190	16.6	253	20,816,551	15.7	207	26,339,590	19.8	78	8,522,040	6.4	39	7,993,179	6.0	1,957	132,965,343
South Dakota (lignite)	—	—	—	—	—	—	—	—	—	1	(1)	—	1	(1)	—	—	—	—	2	3,033	12.4	—	—	—	4	24,445
Tennessee	2	(1)	—	19	1,049,240	16.7	95	3,668,088	58.5	18	925,790	14.8	4	319,306	5.1	2	(1)	—	—	—	—	—	—	—	140	6,270,708
Texas (lignite)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	79,949	100.0	1	79,949
Utah	—	—	—	—	—	—	5	191,954	2.9	5	128,890	1.9	4	340,141	5.1	5	677,351	10.1	7	463,776	7.0	26	4,876,951	73.0	52	6,679,063
Virginia	1	(1)	—	17	923,304	5.4	59	(1)	—	28	(1)	—	27	3,276,983	19.0	6	308,267	1.8	1	(1)	—	6	1,493,647	8.7	145	17,234,993
Washington	—	—	—	4	149,686	11.0	5	27,226	2.0	13	606,517	44.7	2	43,854	3.2	6	210,103	15.5	4	118,089	8.7	12	201,769	14.9	46	1,357,244
West Virginia	—	—	—	69	7,575,878	5.0	302	40,701,436	26.8	261	32,191,221	21.2	129	19,147,633	12.6	134	25,879,386	17.0	88	17,579,391	11.5	75	8,959,287	5.9	1,058	152,034,732
Wyoming	—	—	—	—	—	—	4	124,847	1.3	6	261,570	2.6	3	374,133	3.8	6	784,152	8.0	6	2,767,159	28.1	23	5,535,714	56.2	48	9,847,575
Undistributed	—	1,133,073	—	—	635,719	—	—	8,298,178	—	—	3,896,425	—	—	5,787	—	—	430,661	—	—	2,001,941	—	—	2,899,112	—	—	—
Total	126	6,868,469	1.2	936	32,984,350	5.7	2,250	138,781,258	24.0	1,710	136,348,013	23.6	838	75,131,559	13.0	587	83,738,539	14.5	260	51,212,044	8.9	326	52,553,095	9.1	7,033	577,617,327

1/ Included in "Undistributed".
2/ Less than 0.05 percent.

TABLE 7. - NUMBER AND PRODUCTION OF BITUMINOUS-COAL AND LIGNITE UNDERGROUND MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN EACH DISTRICT IN 1945

(Districts as defined in the Bituminous Coal Act of 1937 and modifications thereto. Exclusive of mines producing less than 1,000 tons)

District	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Total	
	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)
1. Eastern Pennsylvania	6	462,682	1.0	162	2,743,961	6.4	482	27,998,675	64.9	197	8,602,916	20.0	64	2,800,268	6.5	13	122,812	0.3	7	123,515	0.3	19	261,458	0.6	950	43,116,287
2. Western Pennsylvania	5	357,868	.5	17	294,247	.4	86	3,360,565	5.2	56	5,341,594	8.3	138	15,619,856	24.3	143	24,246,564	37.7	48	7,762,397	12.1	20	7,387,226	11.5	513	64,370,317
3. Northern West Virginia	—	—	—	4	213,793	.6	34	3,217,829	9.4	59	2,425,161	7.1	40	3,410,330	10.0	55	9,660,558	28.3	52	10,423,437	30.5	37	4,804,203	14.1	281	34,155,311
4. Ohio	1	2,441	(1)	18	370,097	1.9	151	3,244,218	16.9	124	11,281,295	58.6	46	4,043,567	21.0	16	277,448	1.4	5	31,800	.2	2	2,780	(1)	363	19,253,646
5. Michigan	—	—	—	2	32,676	26.0	1	93,028	74.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	125,704
6. Panhandle	—	—	—	—	—	—	2	12,764	.3	17	2,761,027	75.5	6	885,430	24.2	—	—	—	—	—	—	—	—	—	25	3,659,221
7. Southern Numbered 1	—	—	—	37	5,364,584	9.9	123	21,643,472	39.9	49	8,585,376	15.8	27	8,206,915	15.1	13	5,918,773	10.9	5	2,080,213	3.8	7	2,500,730	4.6	261	54,300,063
8. Southern Numbered 2	4	56,634	(1)	187	6,257,198	5.4	714	48,392,586	42.1	450	38,907,075	33.8	134	10,644,467	9.2	42	8,248,560	7.2	9	1,785,006	1.6	7	766,144	.7	1,547	115,057,670
9. West Kentucky	—	—	—	—	—	—	33	548,204	3.7	186	7,128,119	48.7	86	4,064,087	27.8	28	2,873,973	19.6	2	22,278	.2	—	—	—	335	14,636,661
10. Illinois	—	—	—	—	—	—	15	361,708	.6	83	4,324,443	7.7	68	6,735,772	12.0	56	12,102,554	21.6	29	18,016,338	32.1	19	14,561,277	26.0	270	56,102,092
11. Indiana	—	—	—	—	—	—	8	98,151	.8	35	2,472,181	21.1	20	4,717,088	40.3	10	4,431,102	37.8	—	—	—	—	—	—	73	11,718,522
12. Iowa	1	5,046	.3	25	266,733	17.5	17	160,491	10.5	24	486,092	31.9	17	319,711	21.0	7	179,895	11.8	3	106,574	7.0	—	—	—	94	1,524,542
13. Southeastern	4	127,294	.7	181	4,295,780	24.5	141	6,033,826	34.3	49	5,332,869	30.4	8	578,074	3.3	5	673,283	3.8	—	—	—	3	521,183	3.0	391	17,562,309
14. Arkansas-Oklahoma	14	412,068	26.9	16	428,588	28.0	21	452,733	29.6	8	184,725	12.1	4	30,468	2.0	4	21,522	1.4	—	—	—	—	—	—	67	1,530,104
15. Southwestern	21	153,224	9.0	26	249,210	14.7	36	1,183,220	69.8	22	103,551	6.1	2	6,832	.4	—	—	—	—	—	—	—	—	—	107	1,696,037
16. Northern Colorado	—	—	—	—	—	—	1	143,663	6.1	2	183,685	7.9	12	397,636	17.0	—	—	—	6	581,068	24.8	8	1,033,656	44.2	29	2,339,708
17. Southern Colorado	2	6,101	.1	2	11,949	.2	13	207,182	3.3	27	1,719,962	27.2	32	1,909,992	30.2	22	811,806	12.8	6	181,611	2.9	32	1,475,324	23.3	136	6,323,927
18. New Mexico	—	—	—	—	—	—	3	41,331	10.6	9	89,389	22.9	6	250,314	64.1	2	5,240	1.3	1	(2)	—	1	(2)	—	22	390,625
19. Wyoming	—	—	—	—	—	—	4	124,847	1.4	6	261,570	2.9	3	374,133	4.2	5	524,202	5.8	6	2,767,159	30.8	18	4,941,040	54.9	42	8,992,951
20. Utah	—	—	—	—	—	—	5	191,954	2.9	5	128,890	1.9	4	340,141	5.1	5	677,351	10.1	7	463,776	7.0	26	4,876,951	73.0	52	6,679,063
21. North-South Dakota (lignite) ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3,927	.6	5	13,036	2.0	18	648,715	97.4	25	665,678
22. Montana	1	1,443	.1	—	—	—	2	9,009	.5	5	546,296	28.6	3	641,967	33.6	13	666,361	34.9	2	(2)	—	5	(2)	—	31	1,910,447
23. Washington and Alaska	—	—	—	3	105,385	6.9	5	27,226	1.8	14	636,403	41.9	5	175,522	11.6	6	210,103	13.8	4	118,089	7.8	9	246,849	16.2	46	1,519,577
Undistributed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11,333	—	—	38,389	—	—	—
Total	59	1,584,801	.4	680	20,634,201	4.4	1,897	117,546,682	25.1	1,427	101,502,619	21.7	725	66,152,570	14.2	447	71,656,034	15.3	197	44,487,630	9.5	231	44,065,925	9.4	5,663	467,630,462

1/ Less than 0.05 percent.
2/ Included in "Undistributed".

TABLE 8. - NUMBER AND PRODUCTION OF BITUMINOUS-COAL AND LIGNITE STRIP MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN EACH DISTRICT, IN 1945

(Districts as defined in the Bituminous Coal Act of 1937 and modifications thereto. Exclusive of mines producing less than 1,000 tons)

District	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Total	
	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)
1. Eastern Pennsylvania	7	126,756	0.9	108	4,220,090	31.0	161	6,470,824	47.5	37	1,574,556	11.6	7	563,078	4.1	2	202,686	1.5	3	61,045	0.4	11	411,080	3.0	336	13,630,115
2. Western Pennsylvania	6	541,616	3.7	22	517,935	3.5	23	1,536,922	10.5	79	6,847,341	46.6	53	2,178,566	14.8	51	1,789,191	12.2	24	680,143	4.6	19	605,953	4.1	277	14,697,667
3. Northern West Virginia	—	—	—	2	176,321	1.6	9	465,436	4.3	9	244,206	2.3	15	948,351	8.8	44	3,100,716	28.7	26	3,798,500	35.1	25	2,077,378	19.2	130	10,810,908
4. Ohio	1	(1)	—	38	1,943,839	14.4	58	2,847,736	21.1	64	8,116,547	60.2	6	401,474	3.0	3	154,062	1.1	1	(1)	—	1	(1)	—	172	13,483,789
5. Michigan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6. Panhandle	—	—	—	1	(1)	—	1	(1)	—	9	365,007	38.4	1	(1)	—	1	133,336	14.0	—	—	—	—	—	—	13	949,818
7. Southern Numbered 1	—	—	—	2	85,274	5.0	16	535,804	31.4	12	976,739	57.2	1	(1)	—	—	—	—	1	(1)	—	—	—	—	32	1,706,468
8. Southern Numbered 2	2	123,162	7.3	10	487,502	28.8	13	253,695	15.0	3	52,762	3.1	2	343,742	20.3	2	327,630	19.4	—	—	—	3	102,575	6.1	35	1,691,068
9. West Kentucky	—	—	—	2	(1)	—	7	820,401	14.1	7	578,527	10.0	7	1,182,652	20.4	8	1,735,710	30.0	1	(1)	—	1	(1)	—	33	5,807,711
10. Illinois	2	115,745	.7	3	564,387	3.3	7	4,120,891	24.4	13	5,564,113	32.9	5	2,048,117	12.1	10	3,905,008	23.1	1	515,287	3.1	2	75,552	.4	43	16,909,100
11. Indiana	1	(1)	—	11	862,365	6.4	16	1,823,154	13.5	22	9,523,097	70.7	7	953,831	7.1	3	183,720	1.4	1	(1)	—	—	—	—	61	13,464,089
12. Iowa	—	—	—	—	—	—	5	41,289	7.9	12	320,159	61.4	2	60,213	11.6	4	99,397	19.1	—	—	—	—	—	—	23	521,058
13. Southeastern	2	12 928	.7	27	869,910	43.7	17	630,712	31.7	5	242,807	12.2	3	123,711	6.2	—	—	—	—	—	—	2	108,860	5.5	56	1,988,928
14. Arkansas-Oklahoma	6	157,983	21.6	9	163,474	22.4	3	78,105	10.7	3	136,539	18.7	1	26,578	3.6	3	149,901	20.5	1	18,447	2.5	—	—	—	26	731,027
15. Southwestern	40	4,190,518	51.8	20	2,325,654	28.7	16	1,272,935	15.7	4	227,910	2.8	—	—	—	—	—	—	—	—	—	1	79,949	1.0	81	8,096,966
16. Northern Colorado	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	10,896	100.0	2	10,896
17. Southern Colorado	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	14,028	33.5	—	—	—	2	27,887	66.5	3	41,915
18. New Mexico	—	—	—	—	—	—	—	—	—	—	—	—	1	1,480	100.0	—	—	—	—	—	—	—	—	—	1	1,480
19. Wyoming	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	259,950	30.4	—	—	—	5	594,674	69.6	6	854,624
20. Utah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21. North-South Dakota (lignite) ..	—	—	—	—	—	—	1	(1)	—	3	30,972	1.6	2	(1)	—	6	26,037	1.4	4	221,727	11.8	16	1,595,253	84.8	32	1,881,086
22. Montana	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1,133	(2)	—	—	—	1	2,555,208	100.0	2	2,556,341
23. Washington and Alaska	—	—	—	1	44,301	29.2	—	—	—	1	44,112	29.0	—	—	—	—	—	—	—	—	—	4	63,398	41.8	6	151,811
Undistributed	—	14,960	—	—	88,597	—	—	336,672	—	—	—	—	—	147,196	—	—	—	—	—	1,429,265	—	—	178,507	—	—	—
Total	67	5,283,668	4.8	256	12,350,149	11.2	353	21,234,576	19.3	283	34,845,394	31.7	113	8,978,989	8.2	140	12,082,505	11.0	63	6,724,414	6.1	95	8,487,170	7.7	1,370	109,986,865

1/ Included in "Undistributed".
2/ Less than 0.05 percent.

TABLE 9. - NUMBER AND PRODUCTION OF ALL BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, CLASSIFIED BY THICKNESS OF SEAMS MINED IN EACH DISTRICT IN 1945

(Districts as defined in the Bituminous Coal Act of 1937 and modifications thereto. Exclusive of mines producing less than 1,000 tons)

District	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Total	
	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)	Percent of total production	Number of mines	Production (net tons)
1. Eastern Pennsylvania	13	589,438	1.0	270	6,964,051	12.3	643	34,469,499	60.8	234	10,177,472	17.9	71	3,363,346	5.9	15	325,498	0.6	10	184,560	0.3	30	672,538	1.2	1,286	56,746,402
2. Western Pennsylvania	11	899,484	1.2	39	812,182	1.0	109	4,897,487	6.2	135	12,188,935	15.4	191	17,798,422	22.5	194	26,035,755	32.9	72	8,442,540	10.7	39	7,993,179	10.1	790	79,067,984
3. Northern West Virginia	—	—	—	6	390,114	.9	43	3,683,265	8.2	68	2,669,367	5.9	55	4,358,681	9.7	99	12,761,274	28.4	78	14,221,937	31.6	62	6,881,581	15.3	411	44,966,219
4. Ohio	2	(1)	—	56	2,313,936	7.1	209	6,091,954	18.6	188	19,397,842	59.3	52	4,445,041	13.6	19	431,510	1.3	6	(1)	—	3	(1)	—	535	32,737,435
5. Michigan	—	—	—	2	32,676	26.0	1	93,028	74.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	125,704
6. Panhandle	—	—	—	1	(1)	—	3	(1)	—	26	3,126,034	67.8	7	(1)	—	1	133,336	2.9	—	—	—	—	—	—	38	4,609,039
7. Southern Numbered 1	—	—	—	39	5,449,858	9.7	139	22,179,276	39.6	61	9,562,115	17.1	28	(1)	—	13	5,918,773	10.6	6	(1)	—	7	2,500,730	4.5	293	56,006,531
8. Southern Numbered 2	6	179,796	.2	197	6,744,700	5.8	727	48,646,281	41.7	453	38,959,837	33.4	136	10,988,209	9.4	44	8,576,190	7.3	9	1,785,006	1.5	10	868,719	.7	1,582	116,748,738
9. West Kentucky	—	—	—	2	(1)	—	40	1,368,605	6.7	193	7,706,646	37.7	93	5,246,739	25.7	36	4,609,683	22.5	3	(1)	—	1	(1)	—	368	20,444,372
10. Illinois	2	115,745	.2	3	564,397	.8	22	4,482,599	6.1	96	9,888,556	13.6	73	8,783,889	12.0	66	16,007,562	21.9	30	18,531,625	25.4	21	14,636,829	20.0	313	73,011,192
11. Indiana	1	(1)	—	11	862,865	3.4	24	1,921,305	7.6	57	11,995,278	47.6	27	5,670,919	22.5	13	4,614,[illegible]	18.3	1	(1)	—	—	—	—	134	25,182,611
12. Iowa	1	5,046	.2	25	266,733	13.0	22	201,780	9.9	36	806,251	39.4	19	379,924	18.6	11	279,292	13.7	3	106,574	5.2	—	—	—	117	2,045,600
13. Southeastern	6	140,222	.7	208	5,165,690	26.4	158	6,664,538	34.1	54	5,575,676	28.5	11	701,785	3.6	5	673,283	3.5	—	—	—	5	630,043	3.2	447	19,551,237
14. Arkansas-Oklahoma	20	570,051	25.2	25	592,062	26.2	24	530,838	23.5	11	321,264	14.2	5	57,046	2.5	7	171,423	7.6	1	18,447	.8	—	—	—	93	2,261,131
15. Southwestern	61	4,343,742	44.3	46	2,574,864	26.3	52	2,456,155	25.1	26	331,461	3.4	2	6,832	.1	—	—	—	—	—	—	1	79,949	.8	188	9,793,003
16. Northern Colorado	—	—	—	—	—	—	1	143,663	6.1	2	183,685	7.8	12	397,636	16.9	—	—	—	6	581,068	24.7	10	1,044,552	44.5	31	2,350,604
17. Southern Colorado	2	6,101	.1	2	11,949	.2	13	207,182	3.2	27	1,719,962	27.0	32	1,909,992	30.0	23	825,834	13.0	6	181,611	2.9	34	1,503,211	23.6	139	6,365,842
18. New Mexico	—	—	—	—	—	—	3	41,331	10.5	9	89,389	22.8	7	251,794	64.2	2	5,240	1.3	1	(1)	—	1	(1)	—	23	392,105
19. Wyoming	—	—	—	—	—	—	4	124,847	1.3	6	261,570	2.6	3	374,133	3.8	6	784,152	8.0	6	2,767,159	28.1	23	5,535,714	56.2	48	9,847,575
20. Utah	—	—	—	—	—	—	5	191,954	2.9	5	128,890	1.9	4	340,141	5.1	5	677,351	10.2	7	463,776	6.9	26	4,876,951	73.0	52	6,679,063
21. North-South Dakota (lignite) ..	—	—	—	—	—	—	1	(1)	—	3	30,972	1.2	2	(1)	—	8	29,964	1.2	9	234,763	9.2	34	2,243,968	88.1	57	2,546,764
22. Montana	1	1,443	(2)	—	—	—	2	9,009	.2	5	546,296	12.2	3	641,967	14.4	14	667,494	14.9	2	(1)	—	6	(1)	—	33	4,466,788
23. Washington and Alaska	—	—	—	4	149,686	8.9	5	27,226	1.6	15	680,515	40.7	5	175,522	10.5	6	210,103	12.6	4	118,089	7.1	13	310,247	18.6	52	1,671,388
Undistributed	—	17,401	—	—	88,597	—	—	349,436	—	—	—	—	—	9,239,541	—	—	—	—	—	3,574,889	—	—	2,774,884	—	—	—
Total	126	6,868,469	1.2	936	32,984,350	5.7	2,250	138,781,258	24.0	1,710	136,348,013	23.6	838	75,131,559	13.0	587	83,738,539	14.5	260	51,212,044	8.9	326	52,553,095	9.1	7,033	577,617,327

1/ Included in "Undistributed".
2/ Less than 0.05 percent.

TABLE 10. - NUMBER AND PRODUCTION OF BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, CLASSIFIED BY SIZE OF OUTPUT AND THICKNESS OF SEAMS MINED IN 1920 AND 1945

(Exclusive of mines producing less than 1,000 tons)

Year and size of output	Less than 2 feet			2 to 3 feet			3 to 4 feet			4 to 5 feet			5 to 6 feet			6 to 7 feet			7 to 8 feet			8 feet and over			Unspecified			Total	
	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)	Percent of total production	Number of mines	Production (thousands of net tons)
1920 [1]																													
Mines producing less than 10,000 tons	71	318	3.1	415	1,841	18.0	520	2,407	23.6	291	1,369	13.4	175	765	7.5	63	300	2.9	52	244	2.4	55	208	2.0	1,048	2,769	27.1	2,690	10,221
Mines producing 10,000 to 50,000 tons	54	1,244	1.5	581	13,670	16.9	1,040	26,093	32.2	698	18,493	22.8	415	11,249	14.0	152	4,256	5.3	83	2,130	2.6	72	1,873	2.3	101	1,961	2.4	3,196	80,969
Mines producing 50,000 to 100,000 tons ...	13	803	.9	115	7,859	8.6	400	27,913	30.5	366	26,190	28.6	202	14,506	15.9	109	7,817	8.5	54	3,929	4.3	31	2,070	2.3	6	374	.4	1,296	91,461
Mines producing 100,000 to 200,000 tons ..	1	116	.1	40	5,766	4.0	208	27,911	19.5	318	44,326	30.9	236	33,490	23.4	102	14,294	10.0	81	12,231	8.5	33	4,550	3.2	4	549	.4	1,023	143,233
Mines producing more than 200,000 tons ...	—	—	—	8	2,217	.9	72	20,032	8.4	119	35,994	15.1	194	65,579	27.6	133	49,588	20.9	123	44,799	18.8	51	19,151	8.1	2	512	.2	702	237,872
Total	139	2,481	.4	1,159	31,353	5.6	2,240	104,356	18.5	1,792	126,372	22.4	1,222	125,589	22.3	559	76,255	13.5	393	63,333	11.2	242	27,852	5.0	1,161	6,165	1.1	8,907	563,756
1945																													
Mines producing less than 10,000 tons	70	289	2.3	497	1,610	12.7	1,046	4,197	33.1	763	3,300	26.0	376	1,586	12.5	199	939	7.4	79	340	2.7	110	419	3.3	—	(2)	—	3,140	12,680
Mines producing 10,000 to 50,000 tons	26	617	1.4	262	6,198	13.8	603	13,948	31.1	468	10,677	23.8	224	5,494	12.3	170	3,772	8.4	67	1,674	3.8	100	2,435	5.4	—	(2)	—	1,920	44,815
Mines producing 50,000 to 100,000 tons ...	11	735	1.7	81	5,561	12.7	205	15,067	34.4	136	8,866	20.3	69	4,665	10.7	60	4,283	9.8	31	2,069	4.7	36	2,511	5.7	—	(2)	—	629	43,757
Mines producing 100,000 to 200,000 tons ..	6	851	1.0	62	8,666	10.3	204	29,105	34.5	157	22,746	27.0	64	8,954	10.6	54	7,590	9.0	22	3,324	3.9	22	3,121	3.7	—	(2)	—	591	84,357
Mines producing more than 200,000 tons ...	13	4,377	1.1	34	10,949	2.8	192	76,464	19.5	186	90,759	23.2	105	54,433	13.9	104	67,154	17.1	61	43,805	11.2	58	44,067	11.2	—	(2)	—	753	392,008
Total	126	6,869	1.2	936	32,984	5.7	2,250	138,781	24.0	1,710	136,348	23.6	838	75,132	13.0	587	83,738	14.5	260	51,212	8.9	326	52,553	9.1	—	(2)	—	7,033	577,617

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[1] Report of the United States Coal Commission, part III, opp. p. 1890.
[2] "Unspecified" seam thicknesses were estimated from various sources in 1945.

DESCRIPTION OF DISTRICTS

(As defined in the Bituminous Coal Act of 1937)

District 1. - Eastern Pennsylvania. The following counties in Pennsylvania: Bedford, Blair, Bradford, Cambria, Cameron, Centre, Clarion, Clearfield, Clinton, Elk, Forest, Fulton, Huntingdon, Jefferson, Lycoming, McKean, Mifflin, Potter, Somerset, Tioga.

Armstrong County, including mines served by the P.&S. R.R. on the west bank of the Allegheny River, and north of the Conemaugh division of the Pennsylvania Railroad.

Fayette County, all mines on and east of the line of Indian Creek Valley branch of the Baltimore and Ohio Railroad.

Indiana County, north of but excluding the Saltsburg branch of the Pennsylvania Railroad between Edri and Blairsville, both exclusive.

Westmoreland County, including all mines served by the Pennsylvania Railroad, Torrance, and east.

All coal-producing counties in the State of Maryland.

The following counties in West Virginia: Grant, Mineral, and Tucker.

District 2. - Western Pennsylvania. The following counties in Pennsylvania: Allegheny, Beaver, Butler, Greene, Lawrence, Mercer, Venango, Washington.

Armstrong County, west of the Allegheny River and exclusive of mines served by the P.&S. R.R.

Indiana County, including all mines served on the Saltsburg branch of the Pennsylvania Railroad north of Conemaugh River.

Fayette County, except all mines on and east of the line of Indian Creek Valley branch of the Baltimore and Ohio Railroad.

Westmoreland County, including all mines except those served by the Pennsylvania Railroad from Torrance, east.

District 3. - Northern West Virginia. The following counties in West Virginia: Barbour, Braxton, Calhoun, Doddridge, Gilmer, Harrison, Jackson, Lewis, Marion, Monongalia, Pleasants, Preston, Randolph, Ritchie, Roane, Taylor, Tyler, Upshur, Webster, Wetzel, Wirt, Wood.

That part of Nicholas County including mines served by the Baltimore and Ohio Railroad and north.

District 4. - Ohio. All coal-producing counties in Ohio.

District 5. - Michigan. All coal-producing counties in Michigan.

District 6. - Panhandle. The following counties in West Virginia: Brooke, Hancock, Marshall, and Ohio.

District 7. - Southern Numbered 1. The following counties in West Virginia: Greenbrier, Mercer, Monroe, Pocahontas, Summers.

Fayette County, east of Gauley River and including the Gauley River branch of the Chesapeake and Ohio Railroad and mines served by the Virginian Railway.

McDowell County, that portion served by the Dry Fork branch of the Norfolk and Western Railroad and east thereof.

Raleigh County, excluding all mines on the Coal River branch of the Chesapeake and Ohio Railroad.

Wyoming County, that portion served by the Gilbert branch of the Virginian Railway lying east of the mouth of Skin Fork of Guyandot River and that portion served by the main line and the Glen Rogers branch of the Virginian Railway.

The following counties in Virginia: Montgomery, Pulaski, Wythe, Giles, Craig.

Tazewell County, that portion served by the Dry Fork branch to Cedar Bluff and from Bluestone Junction to Boissevain branch of the Norfolk and Western Railroad and Richlands-Jewell Ridge branch of the Norfolk and Western Railroad.

Buchanan County, that portion served by the Richlands-Jewell Ridge branch of the Norfolk and Western Railroad and that portion of said county on the headwaters of Dismal Creek, east of Lynn Camp Creek (a tributary of Dismal Creek).

District 8. - Southern Numbered 2. The following counties in West Virginia: Boone, Clay, Kanawha, Lincoln, Logan, Mason, Mingo, Putnam, Wayne, Cabell.

Fayette County, west of, but not including mines of the Gauley River branch of the Chesapeake and Ohio Railroad.

McDowell County, that portion not served by and lying west of the Dry Fork branch of the Norfolk and Western Railroad.

Raleigh County, all mines on the Coal River branch of the Chesapeake and Ohio Railroad and north thereof.

Nicholas County, that part south of and not served by the Baltimore and Ohio Railroad.

Wyoming County, that portion served by Gilbert branch of the Virginian Railway lying west of the mouth of Skin Fork of Guyandot River.

The following counties in Virginia: Dickinson, Lee, Russell, Scott, Wise.

All of Buchanan County, except that portion of the headwaters of Dismal Creek, east of Lynn Camp Creek (a tributary of Dismal Creek) and that portion served by the Richlands-Jewell Ridge branch of the Norfolk and Western Railroad.

Tazewell County, except portions served by the Dry Fork branch of Norfolk and Western Railroad and branch from Bluestone Junction to Boissevain of Norfolk and Western Railroad and Richlands-Jewell Ridge branch of the Norfolk and Western Railroad.

The following counties in Kentucky: Bell, Boyd, Breathitt, Carter, Clay, Elliott, Floyd, Greenup, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, McCreary, Magoffin, Martin, Morgan, Owsley, Perry, Pike, Rockcastle, Wayne, Whitley.

The following counties in Tennessee: Anderson, Campbell, Claiborne, Cumberland, Fentress, Morgan, Overton, Roane, Scott.

The following counties in North Carolina: Lee, Chatham, Moore.

District 9. - West Kentucky. The following counties in Kentucky: Butler, Christian, Crittenden, Daviess, Hancock, Henderson, Hopkins, Logan, McLean, Muhlenberg, Ohio, Simpson, Todd, Union, Warren, Webster.

District 10. - Illinois. All coal-producing counties in Illinois.

District 11. - Indiana. All coal-producing counties in Indiana.

District 12. - Iowa. All coal-producing counties in Iowa.

District 13. - Southeastern. All coal-producing counties in Alabama.

The following counties in Georgia: Dade, Walker.

The following counties in Tennessee: Marion, Grundy, Hamilton, Bledsoe, Sequatchie, White, Van Buren, Warren, McMinn, Rhea.

District 14. - Arkansas-Oklahoma. The following counties in Arkansas: All counties in the State.

The following counties in Oklahoma: Haskell, LeFlore, Sequoyah.

District 15. - Southwestern. All coal-producing counties in Kansas. All coal-producing counties in Texas. All coal-producing counties in Missouri.

The following counties in Oklahoma: Coal, Craig, Latimer, Muskogee, Okmulgee, Pittsburg, Rogers, Tulsa, Wagoner.

District 16. - Northern Colorado. The following counties in Colorado: Adams, Arapahoe, Boulder, Douglas, Elbert, El Paso, Jackson, Jefferson, Larimer, Weld.

District 17. - Southern Colorado. The following counties in Colorado: All counties not included in northern Colorado district.

The following counties in New Mexico: All coal-producing counties in the State of New Mexico, except those included in the New Mexico district.

District 18. - New Mexico. The following counties in New Mexico: Grant, Lincoln, McKinley, Rio Arriba, Sandoval, San Juan, San Miguel, Santa Fe, Socorro.

The following counties in Arizona: Pinal, Navajo, Graham, Apache, Coconino.

All coal-producing counties in California.

District 19. - Wyoming. All coal-producing counties in Wyoming.

The following counties in Idaho: Fremont, Jefferson, Madison, Teton, Bonneville, Bingham, Bannock, Power, Caribou, Oneida, Franklin, Bear Lake.

District 20. - Utah. All coal-producing counties in Utah.

District 21. - North Dakota-South Dakota. All coal-producing counties in North Dakota. All coal-producing counties in South Dakota.

District 22. - Montana. All coal-producing counties in Montana.

District 23. - Washington. All coal-producing counties in Washington. All coal-producing counties in Oregon.

The Territory of Alaska.

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MINERAL INDUSTRY SURVEYS

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BUREAU OF MINES

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MINERAL MARKET REPORT
MMS NO. 1527

PHOSPHATE ROCK INDUSTRY OF THE UNITED STATES IN 1946

General Conditions

New records were made in the domestic phosphate rock industry in 1946 according to reports submitted by operators to the Bureau of Mines, United States Department of the Interior. Total production reached a new high at 7,168,839 long tons, of which 5,280,402 were mined in Florida, 1,316,107 in Tennessee, and 572,330 in the Western States.

Phosphate rock sold or used by producers in 1946 also attained a new peak of 6,860,713 long tons (an increase of over a million tons) valued at $31,043,821, which is over 7 million dollars more than the 1945 total. The marketed production from Florida and the Western States in 1946 was also greater than ever before and in the case of Tennessee was greater than in 1945. Imports declined; exports increased 29 percent. Apparent domestic consumption was 6,287,112 tons. Stocks at the end of 1946 had increased to 1,211,000 tons. The P_2O_5 content of the domestic phosphate rock sold or used in 1946 reached a new high--2,216,978 long tons.

Additional details of the production and distribution of phosphate rock are shown in the accompanying tables.

Prepared by Bertrand L. Johnson and E. H. Tucker, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics & Statistics Branch.

Phosphate rock sold or used by producers in the United States, 1945-46, by uses

	1945			1946		
	Long tons	Percent of total	Value	Long tons	Percent of total	Value
Domestic:						
Superphosphates	1/ 3,946,267	68	(2)	4,604,442	67	(2)
Phosphates, phosphoric acid, phosphorus, ferrophosphorus	1/ 863,601	15	(2)	894,501	13	(2)
Direct application to soil	411,643	8	(2)	528,097	8	(2)
Fertilizer filler	14,493	(3)	(2)	50,757	1	(2)
Stock and poultry feed	63,525	1	(2)	53,001	1	(2)
Undistributed 4/	1/ 17,628	(3)	(2)	30,988	(3)	(2)
Exports 5/	489,566	8	(2)	698,927	10	(2)
	5,806,723	100	$23,951,077	6,860,713	100	$31,043,821

1/ Revised.
2/ Data not available.
3/ 0.5 percent or less.
4/ Includes phosphate rock used in pig-iron blast furnaces, parting compounds, research, deflourinated phosphate fertilizers, refractories, and other uses.
5/ As reported to the Bureau of Mines by domestic producers.

Phosphate rock sold or used by producers in the United States, 1945-46, by grades

Grades—B. P. L. 1/ content (percent)	1945			1946		
	Long tons	Percent of total	Value	Long tons	Percent of total	Value
Below 60	523,580	9	(2)	740,424	11	(2)
60 to 66	268,253	5	(2)	305,175	4	(2)
68 basis, 66 minimum	447,882	8	(2)	449,994	7	(2)
70 minimum	916,513	16	(2)	1,058,946	15	(2)
72 minimum	1,251,427	21	(2)	1,619,505	24	(2)
75 basis, 74 minimum	1,177,286	20	(2)	1,450,212	21	(2)
77 basis, 76 minimum	895,814	15	(2)	1,077,659	16	(2)
Above 85 (apatite) Undistributed 3/	325,968	6	(3)	158,798	2	(3)
	5,806,723	100	$23,951,077	6,860,713	100	$31,043,821

1/ Bone phosphate of lime.
2/ Data not available.
3/ Includes numerous grades of B.P.L. content.

Salient statistics of the phosphate-rock industry in the United States, 1945-46, in long tons

	1945			1946		
	Rock	P_2O_5 content	Value	Rock	P_2O_5 content	Value
Production (mined)	5,399,739	1,737,185	(1)	7,168,839	2,316,471	(1)
Sold or used by producers:						
Florida:						
Land pebble	4,103,022	1,382,950	$15,578,980	4,807,563	1,615,519	$19,867,339
Soft rock	71,715	15,050	293,433	97,067	19,652	387,708
Hard rock	63,491	22,613	426,061	100,881	36,627	762,127
Total Florida	4,238,228	1,420,613	16,298,474	5,005,511	1,672,198	21,017,174
Tennessee 2/ 3/	1,294,297	375,370	6,062,688	1,362,600	389,294	7,014,490
Idaho	123,340	38,984	673,027	4/312,658	4/97,964	4/1,805,103
Montana	150,858	49,068	916,288	179,944	57,522	1,207,054
Utah	-------	-------	-------	(4)	(4)	(4)
Virginia	(3)	(3)	(3)	(3)	(3)	(3)
Total United States	5,806,723	1,884,035	23,951,077	6,860,713	2,216,978	31,043,821
Imports 5/	141,658	(1)	1,112,526	59,739	(1)	601,683
Exports 6/	7/490,733	(1)	7/3,737,080	633,340	(1)	5,453,361
Apparent consumption 7/ 8/	5,457,648	(1)	-------	6,287,112	(1)	------
Stocks in producers' hands, December 31:						
Florida	388,000	129,000	(1)	630,000	210,000	(1)
Tennessee 2/ 3/ 9/	411,000	113,000	(1)	464,000	125,000	(1)
Western States	47,000	15,000	(1)	117,000	38,000	(1)
Total stocks	846,000	257,000	(1)	1,211,000	373,000	(1)

1/ Data not available.
2/ Includes sintered matrix.
3/ Virginia included with Tennessee.
4/ Utah included with Idaho.
5/ Market value (or price) at port and time of exportation to the United States.
6/ Value at port of exportation.
7/ Revised.
8/ Quantity sold or used by producers plus imports, minus exports.
9/ Includes brown-rock matrix of sinter grade, sintered brown rock, blue rock, and some matrix of washer grade.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
J. A. KRUG, Secretary R. R. SAYERS, Director

DEC 2 1947
UNIVERSITY OF ILLINOIS

FOR RELEASE JULY 7, 1947.

MINERAL MARKET REPORTS
M. M. S. No. 1528.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

CHROMITE IN 1946

The outstanding feature of the domestic chromite industry in 1946 was the shortage of metallurgical grade chromite, according to the Bureau of Mines, United States Department of the Interior, in a report presenting the final figures for the year.

Salient statistics of chromite in the United States, 1945-46

	1945		1946	
	Short tons	Value	Short tons	Value
New supply:				
Domestic production (shipments)	13,973	$532,382	4,107	$105,041
Imports for consumption........	914,765	17,530,293	757,391	11,459,121
	928,738	18,062,675	761,498	11,564,162
Distribution:				
Consumption by industry	808,120	(1)	734,759	(1)
Exports.......................	12,366	342,114	2,158	80,958
Additions to stocks 2/........	108,252	(1)	24,581	(1)
	928,738	18,062,675	761,498	11,564,162

1/ Not available. 2/ Calculated to strike a balance.

Inasmuch as domestic production totaled only ½ of 1 percent of the new supply of chromite in 1946, the importance of the supply of imported ores in relation to consumption becomes evident. This ratio in 1946 was,

Grade of ore	Consumption, percent of imports
Metallurgical	124.5
Refractory	75.5
Chemical	86.7
Total Chromite	97.0

Prepared by Edwin K. Jenckes, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch. Import and export figures compiled by M. B. Price, of the Bureau of Mines, from records of the U. S. Department of Commerce.

The deficiency in metallurgical grade was made up partly by sales of ore by the Office of Metals Reserve, and partly by the substitution of high grade chemical ore for metallurgical uses.

In 1946, the first full post war year, the decline in domestic production continued for the third successive year, comparable to the decrease at the close of World War 1. There is nothing in 1946 to indicate an arrest of the downward trend in domestic production, which may be expected to descend to a level below a 1,000 tons a year unless technological advances in methods of beneficiation and utilization make the domestic product competitive with imported ores.

The total new supply of all grades of chromite available to industry in 1946, was 18 percent less than in 1945; the supply from domestic mines dropping 71 percent and that from imports 17 percent.

In 1946 the total consumption of chromite was 9 percent below that in 1945, and marked the third successive year of decline from the all-time high of 1943. As compared to 1945 consumption of metallurgical ore dropped 12 percent, that of refractory ore 10 percent, while the use of chemical ore increased 2½ percent. The accompanying table presents the relation of total new supply to consumption for 1942-46.

Total supply, imports for consumption, domestic production, and consumption of chromite, 1942-46, in short tons

	1942	1943	1944	1945	1946
Total supply....................	1,094,483	1,088,696	894,019	928,738	761,498
Imports for consumption..........	981,607	928,576	848,390	914,765	757,393
Domestic production..............	112,876	160,120	45,629	13,973	4,107
Consumption by industry..........	891,952	964,600	848,449	808,120	734,959

Imports of chromite decreased 17 percent from those in 1945. Of the major supplying countries, declines were registered for Cuba, New Caledonia, Southern Rhodesia and U. S. S. R., and substantial increases for India, Philippine Islands Sierra Leone and the Union of South Africa. Imports of chromium products comprised 1,460 tons of ferrochromium and 1 ton of chromates and dichromates, all from Canada. Exports included 2,510 tons of ferrochrome (valued at $732,221), 2,158 tons of ore ($80,958) and 22 tons of chromium metal chromium alloys and chrome bearing scrap ($31,063.)

Chromite imported for consumption in the United States, 1942-46, by countries

Country	Gross weight (short tons)				1946		
					Short tons		Value
	1942	1943	1944	1945	Gross weight	Cr2O3 content	
North America:							
Canada..................	13,705	17,046	20,296	3,726	8,607	4,090	$269,996
Cuba....................	137,826	310,729	349,059	297,820	204,268	73,129	2,419,261
Guatemala...............	......	2,001	1,016	181	......	.....	......
	151,531	329,776	370,371	301,727	212,875	77,219	2,689,257
South America: Brazil...	6,468	9,285	4,278	2,920	.....	.....	....
Europe:							
Cyprus..................	.....	8,400	.....	.....	.....	.....	....
U.S.S.R.................	30,061	99,922	112,315	166,142	98,952	53,391	4,158,931
	30,061	108,322	112,315	166,142	98,952	53,391	4,158,931
Asia:							
India and Dependencies.	21,316	2,800	.....	.....	17,268	8,500	177,964
Philippines, Republic of	30,475	....	.....	.....	30,465	10,469	242,510
Turkey..................	119,548	90,778	98,777	70,845	9,015	4,328	233,430
	171,339	93,578	98,777	70,845	56,748	23,297	653,904
Africa: 1/							
Sierra Leone............	.....	.....	.....	6,397	32,912	14,164	499,562
Southern Rhodesia.......	277,272	243,508	187,781	221,855	99,557	47,228	1,285,449
Union of South Africa..	262,259	111,602	40,376	110,415	235,340	105,831	1,772,596
	539,531	355,110	228,157	338,667	367,809	167,223	3,557,607
Oceania:							
Australia...............	.....	.....	....	73	.....	.....	....
New Caledonia 3/.......	82,677	32,505	34,492	34,391	21,007	11,326	399,422
	82,677	32,505	34,492	34,464	21,007	11,326	399,422
	981,607	928,576	848,390	914,765	757,391	332,456	11,459,121

1/ Sierra Leone listed as British West Africa by the U. S. Department of Commerce.
2/ Southern Rhodesia data for 1946 includes 1,369 tons containing 657 tons chromic oxide valued at $16,375 credited to Mozambique by the U. S. Department of Commerce.
3/ Classified as French Oceania, 1942-44; French Pacific Islands, 1945-46.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

JUL 21 1947

For release July 16, 1947.

MINERAL MARKET REPORT
No. M.M.S. 1529

SECONDARY LEAD IN 1946

Operations in the secondary lead industry during 1946 reached a level second only to the record year 1941, with 392,787 short tons of lead valued at $65,988,216 being recovered from scrap, compared with 363,039 tons valued at $46,468,992 recovered in 1945, according to the Bureau of Mines, United States Department of the Interior. Secondary recovery thus exceeded the production of refined primary lead from domestic ores and base bullion for the second year in succession and the domestic mine production of lead for the first time, and did much to alleviate the shortage caused by low domestic production and imports of primary lead.

Production of soft lead from scrap increased from 70,951 tons in 1945 to 76,150 tons in 1946, but the secondary lead content of antimonial lead produced showed a slight decline, from 194,079 tons in 1945 to 193,684 tons in the succeeding year. Secondary lead recovered in solder, which had declined to only 19,964 tons in 1945, increased 25 percent to 24,918 tons in 1946, whereas the secondary lead content of type metals produced showed a substantial increase for the second successive year--36,725 tons in 1946 compared with 28,525 tons in 1945 and 23,870 tons in 1944. Although total production of the secondary lead industry increased only slightly during the year, data furnished by responding companies revealed that the primary metal content of secondary lead products declined approximately 16 percent, so production from scrap increased substantially.

Of the total secondary lead recovered, 368,094 short tons were reclaimed from lead- and tin-base scrap; the remaining 24,693 tons were contained in secondary brass and bronze and reclaimed by remelting copper-base scrap. A total of 5,408 tons of lead in lead-base scrap was added to brass and bronze to bring the total recovery of secondary lead in this type of product to 30,101 tons.

The gross weight of lead-base scrap consumed during 1946 amounted to 508,833 short tons, the highest tonnage ever reported used, and an increase of 8 percent over the 472,495 tons consumed in 1945. The use of battery-lead plates rose 44,143 tons, of cable-lead scrap 4,681 tons, of type-metal scrap 3,916 tons, and of mixed common-babbitt scrap 924 tons; however, consumption of drosses and residues declined 13,231 tons, of soft-lead scrap 2,541 tons, of solder and tinny-lead scrap 1,235 tons, and of hard-lead scrap 319 tons. The monthly scrap consumption reported by secondary smelters and remelters is the best index of activity at those plants. Consumption of all lead-base scrap items showed a slow decline during the first half of the year under the influence of price restrictions in a rising market, increased substantially during July, the month in which there were no price controls because of lack of legislation, rose again slightly in October, and then reached a peak for the year in December after the removal of price controls.

Prepared by Herbert L. Cullen and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Labor difficulties in the first 6 months of the year, both in this country and in Mexico, cut severely into the primary lead supply and threw more responsibility on secondary producers. It was apparent as early as the first quarter of 1946 that secondary smelters were meeting the emergency as best they could, for recovery from scrap in each quarter exceeded comparable figures for 1944 and 1945. However, there was a constant drain on stock piles of lead held by the Office of Metals Reserve, these inventories being reduced from about 68,000 tons on January 1 to 37,000 tons at the end of the year. A shortage of solder caused the War Assets Administration to issue instructions in September offering for sale immediately their entire stock of this alloy, in order to bolster the industrial supply.

Reflecting the removal of price controls late in the year, consumers' inventories of lead scrap rose from 79,974 tons on December 31, 1945 to 94,929 tons at the end of 1946. This increase was evident in all types of lead scrap--unalloyed lead scrap, lead-base alloy scrap, and drosses and residues. During the same period stocks of secondary pig, bar, and ingot metals at these plants decreased from 28,99 short tons to 27,782 tons.

Secondary lead recovered in the United States, 1945-46, in short tons

Secondary lead recovered

Form of recovery	1945	1946
As metal:		
At primary plants	18,525	8,013
At other plants	42,598	65,691
	61,123	73,704
In antimonial lead 1/	194,079	193,684
In other lead alloys	77,051	94,653
In copper-base alloys	30,346	30,101
In tin-base alloys	440	645
	301,916	319,083
	363,039	392,787

Recoverable lead content of scrap

Kind of scrap processed	1945	1946
New scrap:		
Lead-base	44,793	40,625
Copper-base	2/ 8,397	7,619
	2/ 53,190	48,244
Old scrap:		
Battery-lead plates	186,241	215,657
All other lead-base	107,351	111,787
Copper-base	2/ 16,218	17,074
Tin-base	39	25
	2/309,849	344,543
	363,039	392,787

1/ Includes 42,366 tons of lead recovered in antimonial lead from secondary sources at primary plants in 1945 and 33,850 tons in 1946.

2/ Corrected figures.

Shipments 1/ of secondary lead, tin, and lead- and tin-alloy products in the United States in 1946, gross weight, in short tons

	Gross weight of product2/	Secondary metal content			
		Lead	Tin	Antimony	Copper
Refined pig lead	65,932	65,932	-	-	-
Remelt lead	9,470	7,458	-	-	-
Lead foil	748	314	-	-	-
	76,150	73,704	-	-	-
Refined pig tin	2,803	-	2,803	-	-
Remelt tin	241	-	135	-	-
Tin foil	-	-	-	-	-
	3,044	-	2,938	-	-
Lead and tin alloys:					
Antimonial lead	219,626	193,684	284	12,054	-
Common babbitt	41,253	28,672	1,428	2,632	36
Genuine babbitt	3,642	68	834	121	60
Other tin babbitts	1,467	577	147	90	11
Solder	67,027	24,918	4,975	340	6
Type metals	48,103	36,725	2,248	3,752	20
Miscellaneous lead-tin alloys	8,225	3,686	104	110	-
	389,343	288,330	10,020	19,099	133
Composition foil	986	652	82	16	-
Tin content of chemical products	404	-	404	-	-

1/ Most of the figures herein represent shipments rather than production of the items involved. However, it has been necessary to record actual production figures in some instances where the information is secured from reports on that basis.

2/ Difference between gross weight of product and secondary metal content represents added primary metals or impurity content.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

For release July 16, 1947.

MINERAL MARKET REPORT
M.M.S. NO. 1530

SECONDARY MAGNESIUM IN 1946

During 1946, only 5,117 short tons of secondary magnesium (including alloying ingredients) were recovered from scrap, representing a decline of 45 percent from the 9,247 tons reclaimed in 1945, according to the Bureau of Mines, United States Department of the Interior. The value of this secondary magnesium was $2,097,970 compared with $3,791,270 for that recovered in 1945.

Recovery of magnesium from old scrap constituted 24 percent of the total, compared with only 9 percent in 1945. Although the tonnage reclaimed from old magnesium-base scrap was a little less than in the preceding year, recovery from old aluminum-base scrap increased considerably and that from new magnesium-base scrap suffered a sharp decline. In this respect, consumption of magnesium scrap reached a normal distribution during the year, as the quantity of turnings and borings used amounted to only 24 percent of the total compared with 65 percent in 1945 and 89 percent in 1944. These figures illustrate the difference in the generation of scrap in war production and in normal peace-time production.

As the market for secondary magnesium ingot was practically non-existent, and the supply of scrap was small during the year, secondary smelters produced only 2,063 tons of secondary magnesium-alloy ingot, compared with 7,835 tons in 1945 and 14,419 tons in 1944. However, these smelters reported that production of the 2,063 tons of secondary ingot required the blending of only 3 tons of primary magnesium and 1 ton of alloying ingredients, in addition to the purchased scrap used, compared with 414 tons of primary magnesium and 168 tons of alloying ingredients used in 1945. Recovery of secondary magnesium in magnesium-alloy castings was greatly increased, totaling 1,145 short tons in 1946 compared with 496 tons in 1945.

In addition to the tonnage of magnesium recovered from the melting of aluminum-base scrap (principally wrecked aircraft), an increased amount of magnesium was recovered in aluminum alloys because of the use of magnesium scrap directly for this purpose. A large part of this tonnage was reported by the primary aluminum producers, who find magnesium scrap a suitable means for introducing magnesium content into aluminum alloys. Consumption of magnesium scrap in chemical and incendiary uses declined from 241 tons in 1945 to 128 tons in 1946. Chemical applications included use in fluxing compounds, in the Grignard reaction, and in the production of magnesium nitrate and chloride; and the incendiary uses, which accounted for large tonnages of borings during the war, were in flares and incendiary bombs. Due to the decreased generation of magnesium turnings and borings, storage of this material did not present the same problem as in the past, when large quantities were disposed of by burning to avoid the fire hazard incident to storage.

Prepared by Herbert L. Cullen, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Secondary magnesium recovered in the United States, 1945-46, in short tons

Secondary magnesium recovered			Recoverable magnesium-alloy content of scrap		
Form of recovery	1945	1946	Kind of scrap processed	1945	1946
Magnesium-alloy ingot 1/ (gross weight)	7,359	2,506	New scrap: Magnesium-base	8,422	3,907
Magnesium-alloy castings (gross weight)	496	1,145			
Magnesium-alloy shapes	864	136		8,422	3,907
In aluminum alloys	274	1,218			
In zinc alloys	3	4			
In other alloys	10	2	Old scrap:		
Chemical and incendiary uses	241	106	Magnesium-base	697	632
			Aluminum-base	128	578
	9,247	5,117		825	1,210
				9,247	5,117

1/ Figures include secondary magnesium incorporated in primary magnesium ingot.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

JUL 21 1947
UNIVERSITY OF ILLINOIS

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MINERAL MARKET REPORT
M.M.S. NO. 1531

SECONDARY COPPER AND BRASS IN 1946

The recovery of secondary copper from scrap totaled 803,546 short tons valued at $231,421,248 in 1946, a decline of 20 percent from the 1,006,516 tons valued at $237,537,776 recovered in 1945, according to the Bureau of Mines, United States Department of the Interior. Recovery of copper from old scrap fell from 497,095 tons (corrected figure) to 406,453 tons in 1946. However, recovery from old scrap amounted to approximately 51 percent of the total in 1946 compared with 49 percent in the preceding year. Recovery of copper from new scrap declined from 509,421 tons (corrected figure) in 1945 to 397,093 tons in 1946, as the source of this material was affected by such factors as labor trouble in the brass mills and loss of production caused by readjustment of industry to peacetime manufacturing procedures.

During 1946, 111,613 tons of refined copper (electrolytic grade) were produced from scrap, a gain of more than 13 percent over the 98,338 tons produced from this source in 1945. In view of the strong demand for all types of copper and copper-base scrap during the year, this increase may be interpreted to mean that the lower-grade items of copper scrap, which are normally used by the refineries, were being marketed freely; whereas, the more desirable grades, which are usually consumed by other industries, were being withheld from the market in anticipation of possible price increases. Total recovery of unalloyed copper from scrap increased 21 percent--from 112,856 tons in 1945 to 136,909 tons in 1946.

The commercial production of brass and bronze ingot experienced a decline for the second straight year, totaling 346,241 short tons (gross weight) in 1946 compared with 378,454 tons in 1945 and 518,261 tons in 1944. The 346,261 tons of ingot produced contained 282,981 tons of copper, of which 17,029 tons were refined copper and the rest was recovered directly from scrap. Shipments of ingot during the year totaled 353,457 tons, as inventories at producers' plants declined from 23,259 tons (revised figure) at the beginning of the year to 16,043 tons on December 31. Reports were tabulated covering seventy-two plants classified as brass and bronze-ingot producers in 1946. Four brass-ingot makers produced brass-mill billets and cakes from their scrap melts during the year, which were later rolled into finished products at brass mills. These smelters produced 4,241 tons of brass billets for this purpose.

Production by brass mills from copper and copper-base scrap declined 30 percent from the 1945 level. Their tonnage recovered from scrap in brass and bronze sheet, rod, and tubing dropped from 576,115 tons in 1945 to 389,587 tons in 1946, although their recovery in the same products made of unalloyed copper increased from 8,037 tons in 1945 to 17,171 tons in the following year. Brass mills were not required to

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Prepared by Herbert L. Cullen and A. J. McDermid, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

report their production to CPA during the first three months of the year, when strikes in the copper refineries and brass mills were at a peak. Although exact analysis of the production statistics is difficult for that reason, it is evident that that portion of the total production represented by recovery of metal from scrap was slightly lower in 1946 than during the preceding year. However, reports filed with the Bureau of Mines indicated that, during that part of the first quarter when operations were possible, brass mills operated on a larger percentage of scrap than during the succeeding nine months, because of the shortage of refined copper. Toward the end of the year production by these mills was on a firm basis, that for the month of October being the highest of any peace-time month in the history of the industry.

Recovery of secondary brass and bronze in castings by brass and bronze foundries declined more than 9 percent, from 142,532 tons in 1945 to 129,102 tons in 1946. As in the past, a considerable portion of this tonnage consisted of bronze railroad bearings remelted in railroad foundries and in plants of bearing companies on a toll basis.

The total consumption of purchased copper and brass scrap in 1946 was 1,169,140 short tons, gross weight, a decline of approximately 21 percent from the 1,470,737 tons used in 1945. Brass-ingot makers and refiners decreased their consumption 15 percent to 609,366 tons and the use of scrap by brass mills declined 33 percent to 401,420 tons. Both of these decreases were due mainly to the extreme shortage of the more desirable grades of scrap. The quantity of cartridge cases reported consumed during the year was 63,941 tons. However, an additional tonnage of new deprimed cartridge cases amounting to about half this weight was absorbed by the industry during the year and was probably reported under other scrap classifications. Inventories of copper and brass scrap at consumers' plants increased 12 percent, from 111,162 short tons (revised figure) at the beginning of the year to 124,469 tons on December 31, 1946.

Secondary copper recovered in the United States, 1945-46, in short tons

Secondary copper recovered			Recoverable copper content of scrap		
Form of recovery	1945	1946	Kind of scrap processed	1945	1946
As unalloyed copper:			New scrap:		
At primary plants.....	96,662	105,572	Copper-base..........	1/495,407	388,291
At other plants.......	16,194	31,337	Aluminum-base........	13,211	8,123
			Nickel-base..........	803	678
	112,856	136,909	Zinc-base............	-	1
				1/509,421	397,093
In brass and bronze.....	1/855,574	630,588			
In alloy iron & steel...	2,133	1,932	Old scrap:		
In aluminum alloys......	1/ 16,768	14,434	Copper-base..........	1/495,164	401,791
In other alloys.........	519	491	Aluminum-base........	1,204	3,664
In chemical compounds...	18,666	19,192	Nickel-base..........	503	789
			Lead-base............	60	104
			Tin-base.............	164	104
	893,660	666,637	Zinc-base............	-	1
				1/497,095	406,453
	1,006,516	803,546			
				1,006,516	803,546

1/ Corrected figures.

Analysis and production of secondary copper and copper-alloy products in the United States, 1945-46

Item produced from scrap	Approximate analysis (percent)						Gross weight produced (short tons)	
	Cu	Sn	Pb	Zn	Ni	Al	1945	1946
Refined copper (electrolytic grade)	100	---	---	---	---	---	98,338	111,613
Casting copper....................	99	---	---	---	---	---	3,339	4,839
Copper sheet, rod, tubing, etc.....	99	---	---	---	---	---	8,037	17,171
Copper powder.....................	98	---	---	---	---	---	2,727	2,982
Copper castings...................	98	---	---	---	---	---	415	304
Total unalloyed copper products.	---	---	---	---	---	---	112,856	136,909
Brass and bronze ingots:								
Tin bronze........................	88	10	---	2	---	---	41,621	20,290
Leaded-tin bronze.................	88	6	1½	4½	---	---	37,963	21,703
Leaded red brass..................	85	5	5	5	---	---	128,326	145,999
Leaded semired brass..............	81	3	7	9	---	---	36,162	54,788
High-leaded-tin bronze............	80	10	10	---	---	---	39,326	28,651
Do........................	84	6	8	2	---	---	7,221	10,393
Do........................	75	5	20	---	---	---	4,466	6,674
Leaded yellow brass...............	66	1	3	30	---	---	19,269	24,209
Manganese bronze..................	62	---	---	27	---	5	41,495	9,802
Aluminum bronze...................	89	---	---	---	---	10	3,439	2,328
Nickel silver.....................	58	2	17	18	14	---)	3,704	4,923
Do........................	65	4	3	5	22	---)		
Low brass.........................	80	---	---	20	---	---	4,677	2,304
Silicon bronze....................	92	---	---	4	---	---	3,060	2,719
Conductor bronze..................	94	2	2	2	---	---	438	867
Hardeners and special alloys......	81	---	---	---	---	---	7,287	10,591
Total copper-alloy ingots................................							378,454	346,241
Brass mill billets made by ingot makers..........................							16,653	4,241
Brass and bronze sheet, rod, tubing, etc.........................							1/576,115	1/339,587
Brass and bronze castings..							2/142,532	2/129,102
Brass powder...							659	803
Copper in chemical products (content)............................							18,666	19,192

1/ Gross weight of secondary brass and bronze in commercial shapes. Includes 398,822 tons of copper, 937 tons of nickel, 4,938 tons of lead, 837 tons of tin, 170,099 tons of zinc, and 482 tons of aluminum in 1945; and 266,859 tons of copper, 1,749 tons of nickel, 3,786 tons of lead, 381 tons of tin, 116,743 tons of zinc, and 69 tons of aluminum in 1946.

2/ Gross weight of secondary metal in brass and bronze castings. Includes 112,768 tons of copper, 158 tons of nickel, 12,917 tons of lead, 8,138 tons of tin, 8,517 tons of zinc, and 34 tons of aluminum in 1945; and 99,959 tons of copper, 112 tons of nickel, 15,415 tons of lead, 6,459 tons of tin, 7,022 tons of zinc, and 135 tons of aluminum in 1946.

Consumption of purchased copper scrap in the United States in 1946, gross weight, in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries				Total scrap used
			Brass mills		Foundries and other manufacturers		
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
No. 1 wire and heavy....	33,931	50,864	7,316	1,509	1,840	17,472	112,932
No. 2 wire, mixed heavy, and light.............	34,065	50,745	10,286	4,022	2,387	7,529	109,034
Composition or red brass	41,202	46,725	-	-	19,858	25,073	132,858
Railroad-car boxes......	-	479	-	-	-	50,442	50,921
Yellow brass...........	23,958	79,413	284,898	6,246	3,955	10,893	409,363
Cartridge cases.........	272	12,141	-	51,363	-	165	63,941
Auto radiators (unsweated)	-	22,648	-	-	-	128	22,776
Electrotype shells......	-	1,715	-	-	-	-	1,715
Bronze.................	4,888	29,113	1,604	761	2,325	8,947	47,638
Nickel silver...........	704	2,593	9,604	838	35	16	13,790
Low brass..............	3,811	783	16,921	5,743	477	3,476	31,211
Aluminum bronze.........	247	738	264	45	39	611	1,944
High-lead brass.........	-	524	-	-	-	2,016	2,540
Low-grade scrap and residues..............	80,777	87,030	-	-	417	253	168,477
	223,855	385,511	330,893	70,527	31,333	127,021	1,169,140

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
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MINERAL MARKET REPORT
M.M.S. NO. 1532

For release July 21, 1947.

SECONDARY ALUMINUM IN 1946

The recovery of secondary aluminum, declining for the second year in succession, totaled 278,073 short tons in 1946, valued at $79,839,044, according to the Bureau of Mines, United States Department of the Interior. The record year was 1944 when 325,645 tons were recovered. In 1945, recovery was 298,387 tons valued at $85,279,005.

Although the total recoverable aluminum-alloy content of all scrap treated declined, the recovery from old scrap increased, principally because of greatly increased recovery from aircraft scrap. This boosted the recovery of aluminum from old aluminum-base scrap from 26,712 tons in 1945 to 90,005 tons in 1946. Recovery of aluminum from zinc-base scrap increased threefold on account of increased use of zinc die-cast and die scrap, which contains about 4 percent aluminum.

The over-all decrease in recovery of aluminum from scrap was caused by a falling off in recovery from aluminum-base scrap in wrought products and castings at plants operated by primary producers. Production of secondary aluminum at primary plants declined from 108,705 tons in 1945 to 73,388 tons in 1946, a decrease of more than 32 percent. The figures for the production of secondary aluminum at primary plants represent the secondary metal content of the total production and do not refer to a separate secondary product. At primary plants, scrap is melted with virgin metal and constitutes only a small percentage of the total raw material used. At these plants, which are operated in connection with aluminum rolling mills, home scrap and purchased scrap are used with primary aluminum and added alloying ingredients, such as copper, manganese, and zinc, to make alloys suitable for wrought products or castings. The procedure is such that no method has yet been found for determining the proportions of the secondary recovery to be assigned to castings and to wrought products.

Output of remelt aluminum ingot increased from 198,426 tons in 1945 to 207,574 tons in 1946, a gain of approximately 5 percent. Monthly production exhibited a rising trend in the latter half of the year, reaching a peak of 21,265 tons in October. Production of aluminum-silicon (max. copper 1 percent) alloys, No. 12, and aluminum-copper-silicon (each over 2.5 percent) alloys increased appreciably in 1946 but output of deoxidizing ingot declined from 44,175 tons in 1945 to 31,011 tons in 1946.

Consumption of aluminum-base scrap totaled 344,472 tons in 1946 or 20,796 tons more than in 1945, but the recovery of metal from this kind of scrap was 20,345 tons less. The explanation of this apparent anomaly lies in the fact that a much larger proportion of the scrap consumed in 1946 was aircraft scrap from which the

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Prepared by Herbert L. Cullen and A. J. McDermid, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

recovery is comparatively low. The 1946 consumption of the two items most used in 1945, alloy sheet and borings and turnings, was 88,054 tons and 34,763 tons respectively, compared with 133,920 tons and 104,118 tons in 1945. Total consumption of plant scrap, which includes the higher-priced types, was almost a third more in 1945 than in 1946. New scrap consumption would have been greater in 1946 if more had been available from foundries and fabricators, the generators of such scrap. Activities at these plants were hindered during much of the year by strikes and reconversion problems. Plants reporting on the monthly aluminum scrap survey in 1946 consisted of 68 aluminum-ingot makers, including 7 naval air stations.

Stocks of aluminum scrap in the hands of consumers at the end of 1946 totaled 52,386 tons, compared with 37,589 tons at the end of the preceding year. In addition, there were on December 31, 1946, 3,113 tons of unprepared aircraft scrap at naval air stations and 6,610 tons of aluminum scrap, of which 4,200 tons were aircraft scrap, at the 9 storage depots of the War Assets Administration. There were also large stocks of aircraft scrap at 5 army airfields which had been sold to private companies during the year, some of which started dealer transactions and reported on that survey.

Consumption of purchased aluminum scrap in the United States in 1946, gross weight, in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries				Total scrap used
			Aluminum rolling mills		Foundries and other manufact'rs		
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
Pure clippings, wire, and foil	10,000	272	11,433	------	776	12	22,493
Castings and forgings	31,320	21,038	3,964	------	552	1,864	58,738
Alloy sheet	50,257	4,223	33,344	------	158	72	88,054
Scrap sheet and sheet utensil	------	3,188	------	------	67	256	3,511
Borings and turnings	33,323	------	1,163	------	277	-----	34,763
Die castings	------	------	------	------	765	8	773
Aircraft scrap	------	55,284	------	49,611	-----	50	104,945
Miscellaneous aluminum and dross	20,706	7,958	1,873	------	658	-----	31,195
	145,606	91,963	51,777	49,611	3,253	2,262	344,472

Secondary aluminum 1/ recovered in the United States, 1945-46, in short tons

Secondary aluminum recovered			Recoverable aluminum-alloy content of scrap		
Form of recovery	1945	1946	Kind of scrap processed	1945	1946
As metal	2,145	2,075	New scrap:		
Aluminum alloys	293,967	274,068	Aluminum-base 2/	270,810	187,172
In brass and bronze	1,162	597	Copper-base	107	115
In zinc-base alloys	267	504	Zinc-base	159	52
In magnesium alloys	-----	266	Magnesium-base	-----	199
In chemical compounds	846	563			
				271,076	187,538
	298,387	278,073			
			Old scrap:		
			Aluminum-base 3/	26,712	90,005
			Copper-base	491	169
			Zinc-base	108	336
			Magnesium-base	-----	25
				27,311	90,535
				298,387	278,073

1/ In accordance with common usage, the term "aluminum" covers aluminum alloys, and the figures include all constituents of the alloys recovered from aluminum-base scrap.

2/ Recoverable aluminum content of new aluminum-base scrap was 252,098 tons in 1945 and 174,737 tons in 1946.

3/ Recoverable aluminum content of old aluminum-base scrap was 24,527 tons in 1945 and 82,941 tons in 1946.

Production of secondary aluminum and aluminum-alloy products in the United States, 1944-46, gross weight, short tons

	1944	1945	1946
Secondary aluminum ingot: 1/			
Pure aluminum (98.5 percent)	1,151	2,066	2,075
Silicon (max. Cu, 1 percent)	2,885	10,618	15,700
Silicon (Cu, 1 to 2.5 percent)	14,600	14,635	7,268
No. 12 aluminum	19,735	22,674	38,286
Other aluminum-copper (max. Si, 2.5 percent) alloys	9,772	26,360	23,714
Copper-silicon (each over 2.5 percent) alloys	20,744	50,983	67,540
Aluminum-copper- or aluminum-silicon-nickel alloys	11,864	18,208	2,603
Deoxidizing and other destructive uses	48,652	44,175	31,011
Die-casting alloys	22,631	(2)	(2)
Aluminum hardeners	5,961	3,964	2,242
Wrought alloys	21,651	(2)	(2)
"Primary-grade" ingot	17,078	(2)	(2)
Ingot for chemicals, powder, etc.	5,638	(2)	(2)
Piston alloys	11,815	(2)	(2)
Miscellaneous (and Mg and Zn alloys)	702	4,743	17,135
	3/ 214,879	198,426	207,574
Secondary aluminum at primary plants 4/	5/ 124,108	108,705	73,388
Aluminum powder	6/ 346	6/ 79	------
Aluminum-alloy castings	5/ 1,134	2,555	4,444
Aluminum in chemicals	1,616	846	559

1/ Gross weight of alloys, including copper, silicon, and other added elements; total secondary ingot contained 8,792 tons of primary aluminum in 1944, 6,816 tons in 1945, and 1,025 tons in 1946.

2/ Production for 1945 and 1946 included under other classifications.

3/ Includes 9,089 tons produced on toll in 1944.

4/ Combined with primary aluminum for the production of wrought products and castings.

5/ Revised figures.

6/ Does not include production measured as ingot for graining, powder, atomizing, or chemical purposes.

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MINERAL MARKET REPORT
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SECONDARY ANTIMONY IN 1946

Secondary antimony recovered from lead- and tin-base scrap totaled 19,115 short tons valued at $6,617,613 in 1946, a gain of more than 11 percent over the 17,148 tons valued at $5,432,487 recovered in 1945, according to the Bureau of Mines, United States Department of the Interior.

Old battery plates were the principal source of antimony recovered from scrap in 1946, as in the past. Even without the removal of price controls during the year, treatment of battery plates would have been larger than in 1945, but unloading of this scrap item by nonferrous scrap dealers during the price "holiday" in July, and after the removal of price controls on November 10, resulted in the consumption of an unprecedented volume by smelters and refiners. The tonnage of battery plates consumed increased from 279,471 tons in 1945 to 323,614 tons in 1946. This resulted in the recovery of 10,193 tons of antimony from this source during the year, an increase of 16 percent over the 8,804 tons reclaimed in 1945.

There was little change in consumption of other lead-base scrap items from which antimony is recovered. Use of type-metal scrap increased from 15,188 tons in 1945 to 19,104 tons in 1946 and treatment of cable-lead scrap rose from 9,341 tons in 1945 to 14,022 tons in 1946. Consumption of lead babbitt scrap increased only slightly and that of antimonial lead scrap declined slightly. Although the quantity of antimony recovered in antimonial lead and in other lead-base alloys was greater than that in 1945, recovery of antimony in tin-base alloys declined. Remelters, smelters, and refiners recovered 94 percent of the antimony reclaimed in 1946, the other 6 percent being recovered by bearing manufacturers and other foundries.

During 1946 a larger amount of antimonial-lead scrap than usual was "softened" to produce soft lead and the resulting high-antimony drosses were consumed in other products. As a result of this operation, a study of reports made to the Bureau of Mines and to CPA was conducted in order to establish the fact that all antimony recovered from scrap remained in the alloyed state, none being regained as unalloyed metal or in chemical compounds. With the supply situation in primary antimony being so acute, the high-antimony lead drosses produced in the softening operations found a ready sale for their antimony content. Most of this work was carried out at secondary lead smelters, however, since the quantity of soft lead recovered at primary plants during the year was considerably below that in 1945.

Because of the continuing shortage of antimony, the CPA retained all restrictions on uses and inventories of the metal and continued allocating it under the provisions of General Preference Order M-112 throughout the year.

Prepared by Herbert L. Cullen and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Secondary antimony recovered in the United States, 1945-46, in short tons

Secondary antimony recovered

Form of recovery	1945	1946
In antimonial lead	11,223	12,054
In other lead alloys	5,712	6,850
In tin-base alloys	213	211
	17,148	19,115

Recoverable antimony content of scrap

Kind of scrap processed	1945	1946
New scrap:		
Lead-base	2,097	3,010
Tin-base	-	-
	2,097	3,010
Old scrap:		
Lead-base	14,766	15,925
Tin-base	285	180
	15,051	16,105
	17,148	19,115

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MINERAL MARKET REPORT
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SECONDARY ZINC IN 1946

Secondary zinc recovered in 1946 from purchased scrap and residues totaled 300,682 short tons with a value of $53,521,396, according to the Bureau of Mines, United States Department of the Interior. This total was 17 percent lower than in 1945, when 360,444 tons with a value of $61,996,368 were recovered.

This decrease in recovery of zinc from scrap can be ascribed to decreased activity of brass mills, brass foundries, and fabricators, due to unsettled conditions, the aftermath of war. Secondary zinc recovered in brass and bronze was 28 percent less than in 1945, but the total zinc recovered from scrap in products other than brass and bronze was 137,308 tons in 1946 compared with 133,688 tons in 1945. In that year, 61 percent of all secondary zinc recovered came from brass and bronze scrap, but in 1946 the percentage fell to 52. The secondary zinc plants were less affected by the conversion period than were generators or consumers of copper-base scrap, and in the final quarter of 1946 a number of records for monthly output of secondary zinc products and consumption of zinc scrap were broken. The 1946 decrease in zinc recovered from copper-base scrap was due to unusual conditions, but if history repeats itself, the recovery of zinc from brass scrap in peacetime will be less than during the war years. In wartime, military demands cause the brass and bronze industries to be the largest consumers of zinc, but normally, galvanizing occupies first place. Increased galvanizing activity means increased generation of zinc residues such as galvanizers' dross, skimmings, and sal skimmings; in general, increased generation of such plant scrap means increased scrap consumption and increased secondary recovery of zinc as metal and in chemicals.

Total production of secondary zinc products increased from 133,853 tons in 1945 to 139,195 tons in 1946, and only two items, redistilled slab and rolled zinc, registered decreases. The output of lithopone and lead-free zinc oxide, although greater than in 1945, failed to meet the demand for their use in paints and pigments. The increase in zinc dust can be attributed to its increased use in the manufacture of sodium hydrosulfite, which is used in making paper. Although zinc dust enters into the chemical processes incidental to the making of sodium hydrosulfite, zinc is not an element of the product but can be recovered from the residues of the process as a byproduct, in the form of lead-free zinc oxide or carbonate.

Zinc scrap was used by 24 distillers in 1946. Of these, 13 made only redistilled slab, 6 made only dust and the other 5 made both slab and dust. The 22 who distilled scrap in 1945 carried on the same kind of operations in 1946. One plant

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Prepared by Herbert L. Cullen and A. J. McDermid, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

distilled zinc scrap for the first time in 1946 and one distiller who had not used scrap in 1945 did use it in 1946. Only 3 of these distillers could be described as primary plants using horizontal retorts only; 2 had equipment for both primary and secondary smelting, and the other 19 were secondary plants. All zinc dust is made in secondary plants using vertical retorts. The horizontal retorts used in primary plants are too small and too closely spaced to be conveniently used with the steel boxes employed for condensing zinc dust, but some primary plants distill solid scrap, or flue dust mixed with ore, in horizontal retorts to make slab zinc.

Production of heavy zinc chemicals was carried on in 39 plants. In addition to the distillers and chemical plants, 84 secondary smelters, die-casters, galvanizers, and miscellaneous remelters were covered by the monthly zinc scrap survey, and these 147 plants accounted for 95 percent of the total recovery of secondary zinc from zinc base scrap by all plants, including those reporting only on an annual basis.

Zinc-base scrap consumption totaled 206,876 tons in 1946, 2 percent more than in 1945. Monthly consumption was greatest in the latter part of the year, exceeding 19,000 tons in each of the last 3 months. The most notable increase in consumption for the year was the 72 percent rise in the treatment of die-cast scrap which was connected with the increased manufacture and use of zinc die castings.

The supply of zinc scrap was plentiful in 1946 compared to that of most other metals. This is usually true because most of the zinc scrap treated consists of residues such as skimmings, dross, and flue dust. Some of these are low-grade and in slack times are a drug on the market, but when scrap is scarce they are more easily disposed of and take the place, to some extent, of the higher grade items. The scrap of other metals is chiefly solids or borings and turnings.

Consumption of purchased zinc scrap in the United States in 1946, gross weight, in short tons

Scrap item	Remelters, smelters and refiners		Manufacturers and foundries		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	
Clippings	4,534	-	4,771	-	9,305
Sheet and strip	-	4,484	-	234	4,718
Engravers' plates	-	1,760	-	127	1,887
Skimmings and ashes	44,176	-	31,798	-	75,974
Dross	49,879	-	668	-	50,547
Die castings	-	19,024	217	185	19,426
Rod and die scrap	-	7,441	-	-	7,441
Flue dust and residues	14,338	-	23,240	-	37,578
	112,927	32,709	60,694	546	206,876

Secondary zinc recovered 1/ in the United States, 1945-46, in short tons

Secondary zinc recovered			Recoverable zinc content of scrap		
Form of recovery	1945	1946	Kind of scrap processed	1945	1946
As metal:			New scrap:		
By distillation:			Zinc-base..........	2/114,308	115,245
Slab zinc..........	48,816	44,139	Copper-base..........	2/153,643	107,548
Zinc dust..........	23,416	25,638	Aluminum-base........	1,227	666
By remelting..........	11,704	11,659			
				2/269,178	223,459
	83,936	81,436			
In zinc-base alloys.....	6,531	9,953	Old scrap:		
In brass and bronze.....	226,756	163,374	Zinc-base..........	2/ 25,127	27,690
In aluminum-base alloys.	1,355	390	Copper-base..........	2/ 66,038	49,336
In chemical products:			Aluminum-base........	101	197
Zinc oxide (lead free)	9,130	11,084			
Zinc sulfate..........	3,216	3,573			
Zinc chloride..........	2/11,873	12,267		2/ 91,266	77,223
Lithopone..........	15,647	17,017			
Miscellaneous..........	2/ 2,000	1,088			
				360,444	300,682
	276,508	219,246			
	360,444	300,682			

1/ Zinc content.
2/ Revised.

Production of secondary zinc and zinc-alloy products in the United States, 1945-46, gross weight, in short tons

Products	1945	1946
Redistilled slab zinc..........	49,242	44,516
Zinc dust..........	23,892	26,002
Remelt spelter 1/..........	8,090	8,212
Remelt die-cast slab..........	4,777	7,329
Zinc-die and die-casting alloys..........	2,281	3,002
Galvanizing stock..........	701	876
Rolled zinc..........	3,054	2,729
Secondary zinc in chemical products..........	41,866	45,029

1/ Contains small tonnages of zinc anodes.

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SECONDARY NICKEL IN 1946

The recovery of secondary nickel from nonferrous scrap in 1946 totaled 8,248 short tons, valued at $5,801,643, an increase of 27 percent over the 6,483 tons valued at $4,538,100 in 1945, according to the Bureau of Mines, United States Department of the Interior. The increase in the recovery of secondary nickel was due to two factors: accelerated use of nickel-silver scrap, principally by brass mills, and a sharp increase in the quantity of metallic scrap and residues used in production of nickel chemicals.

Secondary nickel recovered as metal increased from 31 tons in 1945 to 299 tons in 1946, and the production of secondary monel-metal pig, shot, and castings also showed a substantial gain, from 450 tons in 1945 to 1,191 tons in 1946. Output of copper-nickel pig and shot declined from 670 tons averaging 51 percent nickel in 1945 to 350 tons, also averaging 51 percent nickel, in 1946. The year 1945 had marked a definite change in the use of nickel-base scrap, in that a larger quantity of nickel in monel scrap than ever before was used by steel plants and foundries for alloying purposes in cast iron and steel products, and comparatively insignificant tonnages of nickel-base scrap were consumed in the production of nickel as metal or in nickel-base alloys. This swing partially reversed itself in 1946, as use of nickel scrap in nickel ingot and nickel-base alloys swung back to the 1944 level, but recovery of nickel in cast iron and steel in 1946, 1,225 tons, was still considerably higher than the level of the years before 1945.

Consumption of all types of nickel scrap gained over that in the previous year, the most important factors being the increased use of nickel-silver scrap in brass mills and of low-grade scrap residues by chemical plants. Stocks of nickel scrap in scrap-metal dealers' yards declined from 2,114 tons on December 31, 1945 to 1,744 tons on December 31, 1946. However, inventories of nickel scrap at consumers' plants rose from 4,350 tons to 5,191 tons in the same period. The above-quoted stocks of dealers and consumers are not exactly comparable because of the fact that nickel-silver scrap is included in consumer inventories and is omitted from dealer inventories.

Prepared by Herbert L. Cullen, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Secondary nickel (nonferrous) recovered in the United States, 1945-46, in short tons

Secondary nickel recovered			Recoverable nickel content of scrap		
Form of recovery	1945	1946	Kind of scrap processed	1945	1946
As metal...............	31	299	New scrap:		
In nickel-base alloys..	672	906	Nickel-base..........	2,203	3,190
In copper-base alloys..	2,120	3,039	Copper-base..........	821	1,727
In aluminum-base alloys	1,364	916	Aluminum-base........	1,227	666
In lead-base alloys....	-	12			
In cast iron & steel 1/	1,702	1,225		4,251	5,583
In chemical compounds..	594	1,851			
	6,483	8,248	Old scrap:		
			Nickel-base..........	1,449	1,911
			Copper-base..........	643	496
			Aluminum-base........	136	250
			Lead-base............	4	8
				2,232	2,665
				6,483	8,248

1/ Includes only nonferrous nickel scrap added to cast iron and steel.

Consumption of purchased nickel scrap in the United States in 1946, gross weight, in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	
Pure nickel..............	177	43	1,209	190	1,619
Monel metal..............	312	2,009	1,616	290	4,227
Nickel silver............	704	2,593	9,639	854	13,790
Miscellaneous nickel alloys	24	-	-	1	25
Nickel residues..........	997	-	1,543	991	3,531
	2,214	4,645	14,007	2,326	23,192

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MINERAL MARKET REPORT
M.M.S. NO. 1536

SECONDARY TIN IN 1946

Recovery of secondary tin from scrap totaled 27,671 short tons valued at $30,205,663 in 1946, a decline of 21 percent from the 35,133 tons valued at $36,538,320 in 1945, according to the Bureau of Mines, United States Department of the Interior.

Detinning plants produced 2,772 short tons of pig tin from old tin cans and new tin-plate clippings, and 7 tons from tin-base scrap, whereas 159 tons as metal were recovered at plants of secondary smelters--recovery of unalloyed tin from scrap totaling 2,938 tons or 21 percent less than in 1945. Recovery of tin in lead-base alloys gained slightly over the 1945 figure, but recovery in solder, in tin babbitt, in chemical compounds, and in brass and bronze all declined.

The effect of the growing scarcity of tin in the United States was reflected in the consumption of the various items of tin-base scrap. Although consumption of block-tin pipe and tin residues increased slightly, the use of tin dross, pewter scrap, and high tin babbitt suffered substantial declines. The program of the National Lead Company for recovering tin from excess type metal accounted for 24 tons of tin in 1946 compared with 11 tons in 1945. This tin was recovered as a tin-bearing chemical residue and later reduced to pig tin at one of the detinning plants.

The consumption of purchased tin-base scrap and residues declined 23 percent, from 8,081 tons in 1945 to 6,222 tons in 1946, manufacturers and foundries using 112 tons and remelters and smelters the remaining 6,110 tons. Consumers' inventories of tin-base scrap and residues increased 76 percent during the year, from 1,022 tons on January 1 to 1,799 tons on December 31, reversing the downward trend which had been evident during the war years.

A complete report on the recovery of secondary tin at detinning plants in 1946, Mineral Market Report No. 1501, was released by the Bureau of Mines on March 20, 1947. This report is supplementary to the one previously issued and completes the statistics on secondary tin for last year.

Prepared by Herbert L. Cullen and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Secondary tin recovered in the United States, 1945-46, in short tons

Secondary tin recovered

Form of recovery	1945	1946
As metal:		
At detinning plants	3,527	2,779
At other plants	190	159
	3,717	2,938
In solder	7,740	4,975
In tin babbitt	1,592	981
In chemical compounds	465	404
In lead-base alloys	3,990	4,146
In brass and bronze	17,629	14,227
	31,416	24,733
	35,133	27,671

Recoverable tin content of scrap

Kind of scrap processed	1945	1946
New scrap:		
Tin plate	2,911	2,884
Tin-base	1,772	1,580
Lead-base	1,360	2,280
Copper-base	5,113	3,375
	11,156	10,119
Old scrap:		
Tin cans	1,070	260
Tin-base	4,392	3,101
Lead-base	5,156	4,239
Copper-base	13,359	9,952
	23,977	17,552
	35,133	27,671

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
R. R. SAYERS, Director

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JUL 21 1947
UNIVERSITY

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MINERAL MARKET REPORT
M.M.S. NO. 1537

COKE AND COAL CHEMICAL MATERIALS IN 1946 1/

The coke industry, an important factor in the conversion of the Nation's heavy industries from war production to peacetime operations, encountered many obstacles in 1946 and the total coke output of 58,497,848 tons represents a decrease of 13 percent from 1945 and 21 percent from the peak of 1944, according to the Bureau of Mines, United States Department of the Interior. The decline was due to interruptions in coking operations because of labor difficulties in the steel and bituminous-coal industries. The four-week steel strike beginning on January 21, 1946, caused the rate of coke production at oven plants connected with iron and steel works to decline from 82.1 percent of capacity in December 1945 to a low of 36.3 percent in February 1946. During this period beehive-coke ovens could not ship their coke to steel plants and in seeking other markets exported such large quantities that monthly exports in the first two months of 1946 were the highest on record. Nonfurnace or merchant oven plants were not directly affected by the stoppage and operated at 90 percent of capacity in this period. The settlement of the steel strike started the flow of coke to blast furnaces and in March the average daily production of beehive and oven coke increased 64 percent over the February figure, but with the stoppages in the bituminous-coal industry in April and May the output of oven coke dropped sharply from the March rate and beehive production declined to the lowest point on record. Settlement of the coal strike on May 29 caused production to increase steadily until November 21 when the bituminous-coal miners walked out again, forcing oven-coke plant operators to slow down their coking schedules and practically closing all beehive plants until the strike ended on December 7.

The interruptions in plant operations necessarily reduced the consumption of coking coal and 13 percent less coal was charged into the ovens than in 1945. Although requirements of coking coal in 1946 were less than in the previous year, supplies of high-grade coking coals were extremely limited throughout the year. The Solid Fuels Administration, in order to distribute the available coal equitably and prevent the shut-down of essential industrial operations, issued a number of emergency distribution regulations and "freeze" orders in 1946. Coal was allocated widely during the coal and transportation strikes and emergency regulations were used for the last time during the coal strike in November-December. The Bureau of Mines cooperated closely with the Solid Fuels Administration in collecting and compiling statistical data relating to requirements, consumption, stocks, and days' supply of coking coal at individual oven-coke plants.

General increases in mining and transportation costs in 1946 caused the average value of coking coal delivered to coke plants to rise $0.45 per ton over 1945, a gain of nearly 9 percent. The average values of $5.77 and $3.59 per ton for coal delivered to oven- and beehive-coke plants, respectively, were the highest on record.

The disposal pattern of coke in 1946 followed in general that of 1945, blast furnaces accounting for 75 percent of the total consumption; iron foundries, 5 percent; the manufacture of producer gas and water gas, 7 percent; other industrial purposes, 4 percent; and domestic coke sales, 9 percent. Sales of coke for domestic heating declined greatly from 1945 and were equal to only 62 percent of the 1940 figure.

Coke prices in general followed the rise in coal and labor costs. The average increases in the price per ton of coke sold by producers (merchant sales) in 1946 were as follows: Furnace coke, $0.84; foundry coke, $1.03; coke used in the manufacture of water gas, $1.37; other industrial, $1.05; and domestic coke, $1.19.

Preliminary data from the Bureau's annual survey of employment at coke plants revealed that in 1946, 18,700 men were employed at oven-coke plants and worked 53,350,000 man-hours, reductions from 1945 of 1,754 men and 5,942,507 man-hours. The number of men employed at beehive plants increased from 2,533 in 1945 to 2,800 in 1946 but the man-hours worked decreased from 5,082,575 to 4,550,000. Several plants that had been idle for some months resumed operations in the latter part of 1946 which accounted for the increase in number of men employed.

The effect of the reduced output of coke was reflected all through the basic coal chemical materials and further into the derivatives of tar and light oil. Production of crude tar decreased 14 percent from 1945; ammonia (NH_3 equivalent of all forms), 15 percent; crude light oil, 16 percent; and coke-oven gas, 13 percent. The total value realized through the sales of all coal chemical materials at producing plants decreased only 9 percent from 1945 to $157,389,875 chiefly because of price increases for gas, tar, and ammonium sulfate. The value of all coke, breeze, and coal chemical materials in 1946 was $659,788,514, a decrease of 6 percent from 1945.

1/ This report contains selected tables showing final statistics of the coke industry for 1946. A complete report with detailed tables to be released as a chapter of Minerals Yearbook, 1946, will be distributed to the regular mailing list.

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TABLE 1. - SALIENT STATISTICS OF THE COKE INDUSTRY IN THE UNITED STATES IN 1946

	Vertical slot-type ovens	Beehive ovens	Total
Coke produced -			
At merchant plants:			
Net tons	12,388,485	(1)	12,388,485
Value	$122,963,480		$122,963,480
At furnace plants:			
Net tons	41,540,962		41,540,962
Value	$327,096,732		$327,096,732
Total:			
Net tons	53,929,447	4,568,401	58,497,848
Value	$450,060,212	$36,669,170	$486,729,382
Screenings or breeze produced:			
Net tons	4,232,252	76,015	4,308,267
Value	$11,717,566	$113,796	$11,831,362
Coal charged into ovens:			
Bituminous:			
Net tons	76,120,674	7,167,424	83,288,098
Value	$439,292,647	$25,722,680	$465,015,327
Average per ton	$5.77	$3.59	$5.58
Anthracite:			
Net tons	238,812	....	238,812
Value	$1,250,853	....	$1,250,853
Average per ton	$5.24	....	$5.24
Total:			
Net tons	76,359,486	7,167,424	83,526,910
Value	$440,543,500	$25,722,680	$466,266,180
Average per ton	$5.77	$3.59	$5.58
Average yield in percent of coal charged:			
Coke	70.63	63.74	70.03
Breeze (at plants actually recovering)	5.54	2.92	5.46
Ovens:			
In existence January 1	14,510	12,179	26,689
In existence December 31	14,494	12,864	27,358
Dismantled during year	100	11	111
In course of construction December 31	824	....	824
Annual coke capacity December 31 ...... net tons	71,112,600	8,427,000	79,539,600
Coke used by producer -			
In blast furnaces:			
Net tons	29,705,380	51,367	29,756,747
Value	$242,177,121	$581,918	$242,759,039
In foundries:			
Net tons	68,539	....	68,539
Value	$669,345	....	$669,345
To make producer gas:			
Net tons	801,353	....	801,353
Value	$5,956,376	....	$5,956,376
To make water gas:			
Net tons	1,429,785	....	1,429,785
Value	$11,012,922	....	$11,012,922
For other purposes:			
Net tons	352,273	1,079	353,352
Value	$2,914,160	$10,770	$2,924,930
Coke sold -			
To financially affiliated plants -			
For blast-furnace use:			
Net tons	8,791,275	1,210,447	10,001,722
Value	$57,666,275	$8,278,178	$65,944,453
For foundry use:			
Net tons	2,344	....	2,344
Value	$16,213	....	$16,213
For manufacture of water gas:			
Net tons	583,904	....	583,904
Value	$5,230,353	....	$5,230,353
For other purposes:			
Net tons	186,906	53,939	240,845
Value	$1,585,360	$549,481	$2,134,841
To other consumers -			
For blast-furnace use:			
Net tons	1,909,401	2,032,622	3,942,023
Value	$16,892,654	$16,475,820	$33,368,474
For foundry use:			
Net tons	2,571,324	353,995	2,925,319
Value	$32,441,337	$3,302,073	$35,743,410
For manufacture of water gas:			
Net tons	942,837	190,438	1,133,275
Value	$9,198,354	$1,652,029	$10,850,383
For other industrial use:			
Net tons	1,557,830	493,526	2,051,356
Value	$14,758,195	$4,281,119	$19,039,314
For domestic use:			
Net tons	4,947,085	149,648	5,096,733
Value	$48,977,854	$1,186,250	$50,164,104

Continued on next page.

TABLE 1. - SALIENT STATISTICS OF THE COKE INDUSTRY IN THE UNITED STATES IN 1946 - Continued

	Vertical slot-type ovens	Beehive ovens	Total
Disposal of screenings or breeze:			
Used by producer -			
For raising steam:			
Net tons	3,134,177	6,384	3,140,561
Value	$8,454,978	$14,683	$8,469,661
To make producer or water gas:			
Net tons	45,806	....	45,806
Value	$164,015	....	$164,015
For other purposes:			
Net tons	551,155	21	551,176
Value	$1,417,482	$165	$1,417,647
Sold:			
Net tons	1,023,587	41,967	1,065,554
Value	$3,049,084	$58,388	$3,107,472
Average receipts per ton sold (merchant sales):			
Furnace coke	$8.85	$8.11	$8.46
Foundry coke	$12.62	$9.33	$12.22
Water-gas coke	$9.76	$8.67	$9.57
Other industrial coke	$9.47	$8.67	$9.28
Domestic coke	$9.90	$7.93	$9.84
Screenings or breeze	$2.98	$1.39	$2.92
Stocks on January 1, 1947:			
Furnace coke ... net tons	445,763	30,750	476,513
Foundry coke ... do	12,565	1,508	14,073
Domestic and other coke ... do	434,585	3,595	438,180
Screenings or breeze ... do	712,252	2,971	715,223
Exports ... do	(1)	(1)	1,231,327
Imports ... do	(1)	(1)	52,188
Indicated consumption ... do	(1)	(1)	57,321,756
Coal chemical materials produced:			
Tar ... gallons	596,868,745	....	596,868,745
Ammonium sulfate or equivalent ... pounds	1,487,434,225	....	1,487,434,225
Gas ... M cubic feet	783,637,016	....	783,637,016
Burned in coking process ... percent	37.48	....	37.48
Surplus sold or used ... do	61.32	....	61.32
Wasted ... do	1.20	....	1.20
Crude light oil ... gallons	206,914,333	....	206,914,333
Yield of coal chemical materials per ton of coal:			
Tar ... gallons	7.82	....	7.82
Ammonium sulfate or equivalent ... pounds	19.79	....	19.79
Gas ... M cubic feet	10.26	....	10.26
Crude light oil ... gallons	2.77	....	2.77
Value of coal chemical materials sold:			
Tar:			
Sold	$21,284,137	....	$21,284,137
Used by producer	$3,837,895	....	$3,837,895
Ammonium sulfate or equivalent	$19,442,059	....	$19,442,059
Gas (surplus)	$83,184,679	....	$83,184,679
Crude light oil and derivatives	$23,581,473	....	$23,581,473
Other coal chemical materials 2/	$9,897,527	....	$9,897,527
Total value of coke and breeze produced and coal chemical materials sold 3/	$623,005,546	$36,782,966	$659,788,514

1/ Not separated. 2/ Includes naphthalene, tar derivatives, and miscellaneous coal chemical materials. 3/ Includes value of tar used by producer.

TABLE 2. - NUMBER AND PRODUCTION OF OVEN-COKE PLANTS CONNECTED WITH IRON FURNACES AND OF OTHER PLANTS IN THE UNITED STATES, 1913, 1918, 1937, AND 1944-46

Year	Number of active plants		Coke produced (net tons)		Percent of production	
	Furnace plants	Other plants	Furnace plants	Other plants	Furnace plants	Other plants
1913	20	16	9,277,832	3,436,868	73.0	27.0
1918	36	24	19,220,342	6,777,238	73.9	26.1
1937	43	42	36,134,209	13,076,539	73.4	26.6
1944	53	35	52,919,844	14,144,951	78.9	21.1
1945	53	34	48,695,172	13,399,116	78.4	21.6
1946	53	32	41,540,962	12,388,485	77.0	23.0

TABLE 3. - STATISTICAL TRENDS OF THE COKE INDUSTRY IN THE UNITED STATES, 1937 AND 1943-46

	1937	1943	1944	1945	1946
Production:					
Oven coke .... net tons ..	49,210,748	63,742,676	67,064,795	62,094,288	53,929,447
Beehive coke .... do ..	3,164,721	7,933,387	6,973,022	5,213,893	4,568,401
Total .... do ..	52,375,469	71,676,063	74,037,817	67,308,181	58,497,848
Percent from vertical slot-type ovens	94.0	88.9	90.6	92.3	92.2
Stocks of coke, end of year .... net tons ..	2,595,287	862,100	1,124,685	931,813	928,766
Exports, all coke .... do ..	526,683	994,607	866,835	1,478,746	1,231,327
Imports, all coke .... do ..	286,364	98,127	63,004	51,964	52,188
Indicated consumption, all coke ...... do ..	51,271,929	71,406,532	72,971,401	66,074,271	57,321,756
Disposal, all coke sold or used:					
Furnace coke .... do ..	36,751,969	57,690,160	57,481,353	51,002,921	43,700,492
Foundry coke .... do ..	2,038,822	2,606,889	2,511,854	2,636,731	2,996,202
Other industrial coke (including producer and water gas) .... do ..	4,597,894	6,999,884	6,978,062	6,937,553	6,593,870
Domestic coke .... do ..	8,107,518	4,885,528	6,717,543	6,775,508	5,096,733
Ovens:					
Vertical slot type in existence, end of year ...	12,718	14,253	14,580	14,510	14,494
Beehive in existence, end of year	12,194	17,666	16,318	12,179	12,864
Vertical slot type under construction, end of year	259	528	180	335	824
Cost of coal charged, vertical slot-type ovens, average per ton	$3.74	$4.75	$5.08	$5.28	$5.77
Prices of coke:					
Average spot price of Connellsville furnace coke, f.o.b. ovens	$4.29	$6.46	$7.00	$7.29	$8.13
Average realization on oven coke sold (merchant sales):					
Furnace coke	$4.34	$7.26	$7.59	$7.87	$8.85
Foundry coke	$8.47	$10.17	$11.03	$11.48	$12.62
Other industrial coke (including water gas)	$6.08	$7.43	$8.12	$8.35	$9.58
Domestic coke	$6.53	$8.21	$8.63	$8.69	$9.90
Yield of coal chemical materials per ton of coal charged:					
Tar .... gallons ..	8.67	8.11	8.13	7.95	7.82
Ammonium sulfate or equivalent ..... pounds ..	21.84	20.32	20.29	20.22	19.79
Crude light oil .... gallons ..	2.86	2.83	2.87	2.84	2.77
Surplus gas sold or used ..... M cubic feet ..	6.66	6.59	6.58	6.33	6.29
Average gross receipts for coal chemical materials per ton of coke produced:					
Tar sold and used	$0.502	$0.463	$0.458	$0.447	$0.466
Ammonia and its compounds	$0.326	$0.355	$0.324	$0.356	$0.361
Crude light oil and its derivatives (including naphthalene)	$0.435	$0.546	$0.552	$0.503	$0.467
Surplus gas sold or used	$1.483	$1.390	$1.403	$1.413	$1.542
Total coal chemical materials including breeze	$2.974	$3.123	$3.102	$3.069	$3.207

TABLE 4. - RELATIONSHIP OF PRODUCTION TO POTENTIAL MAXIMUM CAPACITY 1/ AT OVEN-COKE PLANTS IN THE UNITED STATES, 1937 AND 1943-46, BY MONTHS, IN PERCENT

Month	1937	1943	1944	1945	1946	Month	1937	1943	1944	1945	1946
January	83.0	98.7	95.8	89.1	61.8	August	86.0	96.3	91.1	82.4	88.4
February	83.5	98.8	96.6	89.6	47.4	September	86.1	96.7	89.8	84.0	89.4
March	84.9	98.0	95.7	90.2	81.3	October	76.0	94.7	91.1	64.1	89.2
April	84.9	98.0	96.2	86.3	64.5	November	62.8	90.7	90.8	80.5	82.4
May	84.6	96.4	95.5	88.4	41.7	December	53.1	94.2	89.7	83.2	77.2
June	78.6	92.6	94.3	85.3	73.9						
July	83.2	93.3	91.5	88.3	86.2	The year	78.8	95.7	93.1	84.3	73.8

1/ Capacity of all ovens in existence, whether active or idle, based upon maximum daily capacity times days in month.

TABLE 5. - COKE PRODUCED, VALUE, NUMBER OF OVENS, COAL CHARGED, AND AVERAGE YIELD IN THE UNITED STATES IN 1946, BY STATES
(Exclusive of screenings or breeze)

State	Oven coke						
	Plants	Ovens	Coal charged (net tons)	Yield of coke from coal (percent)	Coke produced (net tons)	Value of coke at ovens	
						Total	Per ton
Alabama	7	1,490	6,530,336	71.45	4,665,939	$32,669,886	$7.00
California	1	90	420,297	61.97	260,470	(1)	(1)
Colorado	1	188	832,415	67.10	558,545	(1)	(1)
Illinois	2/9	856	4,505,323	70.86	3,192,395	32,241,972	10.10
Indiana	5	1,863	9,198,959	72.31	6,651,567	59,312,827	8.92
Maryland	1	422	2,296,212	72.36	1,661,606	(1)	(1)
Massachusetts	2	215	1,497,347	69.87	1,046,267	(1)	(1)
Michigan	4	568	3,471,559	72.00	2,499,664	26,191,476	10.48
Minnesota	3	196	1,192,679	72.17	860,754	8,468,220	9.84
New Jersey	2	304	1,738,942	72.39	1,258,854	(1)	(1)
New York	8	1,142	7,108,999	70.93	5,042,674	44,316,777	8.79
Ohio	15	2,099	11,924,954	70.87	8,451,580	69,357,225	8.21
Pennsylvania	13	3,564	18,597,362	68.80	12,794,721	90,189,945	7.05
Tennessee	1	44	314,340	73.09	229,751	(1)	(1)
Texas	....	125	....	....	....	....	.....
Utah	2	308	807,594	60.32	487,133	(1)	(1)
West Virginia	5	506	3,072,457	70.38	2,162,453	12,190,707	5.64
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	6	514	2,849,711	73.87	2,105,074	21,026,086	9.99
Undistributed	....	......	....	....	....	54,095,091	9.83
Total: 1946	85	14,494	76,359,486	70.63	53,929,447	450,060,212	8.35
1945	87	14,510	87,536,764	70.94	62,094,288	470,190,339	7.57

State	Beehive coke						Total	
	Ovens	Coal charged (net tons)	Yield of coke from coal (percent)	Coke produced (net tons)	Value of coke at ovens		Coke produced (net tons)	Value of coke at ovens
					Total	Per ton		
Alabama	......	....	....	....	....	.....	4,665,939	$32,669,886
California	......	....	....	....	....	.....	260,470	(1)
Colorado	160	90,831	64.69	58,761	(1)	(1)	617,306	(1)
Illinois	......	....	....	....	....	.....	3,192,395	32,241,972
Indiana	......	....	....	....	....	.....	6,651,567	59,312,827
Maryland	......	....	....	....	....	.....	1,661,606	(1)
Massachusetts	......	....	....	....	....	.....	1,046,267	(1)
Michigan	......	....	....	....	....	.....	2,499,664	26,191,476
Minnesota	......	....	....	....	....	.....	860,754	8,468,220
New Jersey	......	....	....	....	....	.....	1,258,854	(1)
New York	......	....	....	....	....	.....	5,042,674	44,316,777
Ohio	......	....	....	....	....	.....	8,451,580	69,357,225
Pennsylvania	10,547	6,285,177	64.07	4,027,167	31,627,135	7.85	16,821,888	121,817,080
Tennessee	......	....	....	....	....	.....	229,751	(1)
Utah	297	11,553	45.30	5,234	(1)	(1)	492,367	(1)
Virginia	750	291,852	58.67	171,242	1,619,144	9.46	171,242	1,619,144
West Virginia	915	354,489	62.23	220,597	1,913,713	8.68	2,383,050	14,104,420
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	195	133,522	63.96	85,400	(1)	(1)	2,190,474	(1)
Undistributed	......	....	....	....	1,509,178	10.10	....	76,630,355
Total: 1946	12,864	7,167,424	63.74	4,568,401	36,669,170	8.03	58,497,848	486,729,382
1945	12,179	8,134,629	64.10	5,213,893	38,349,703	7.36	67,308,181	508,540,042

1/ Included under "Undistributed." 2/ 1 plant closed down in August.

TABLE 6. - OVEN COKE PRODUCED AND SOLD OR USED BY PRODUCER IN THE UNITED STATES IN 1946, BY STATES
(Exclusive of screenings or breeze)

State	Produced		Used by producer -				Sold	
			In blast furnaces		For other purposes 1/		Furnace 2/	
	Net tons	Value	Net tons	Total	Net tons	Value	Net tons	Value
Alabama	4,665,939	$32,669,886	3,760,399	$24,139,583	12,465	$82,688	61,822	$464,016
California	260,470	(3)	268,171	(3)	242	(3)	....	....
Colorado	558,545	(3)	528,110	(3)	6,123	(3)	....	....
Illinois	3,192,395	32,241,972	1,532,023	15,134,972	79,352	637,636	949,022	9,072,467
Indiana	6,651,567	59,312,827	4,317,649	37,587,221	127,767	988,921	1,493,264	13,057,735
Maryland	1,661,606	(3)	1,642,866	(3)	225	(3)	....	....
Massachusetts	1,046,267	(3)	....	....	136,155	(3)	8,389	(3)
Michigan	2,499,664	26,191,476	1,196,010	(3)	147,845	1,330,921	146,118	(3)
Minnesota	860,754	8,468,220	510,735	(3)	9,753	62,926	....	....
New Jersey	1,258,854	(3)	....	....	237,795	(3)	....	....
New York	5,042,674	44,316,777	1,171,253	(3)	1,108,874	8,033,073	1,333,909	10,599,741
Ohio	8,451,580	69,357,225	6,249,732	50,090,917	89,206	912,079	886,997	7,254,647
Pennsylvania	12,794,721	90,189,945	6,801,816	53,144,366	135,383	1,057,211	4,333,684	26,098,814
Tennessee	229,751	(3)	117,271	(3)	....	....	....	....
Utah	487,133	(3)	391,547	(3)	7,788	(3)	17,649	(3)
West Virginia	2,162,453	12,190,707	1,217,798	(3)	356,460	(3)	409,164	2,495,174
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin ..	2,105,074	21,026,086	....	....	196,517	1,605,576	560,658	3,908,478
Undistributed	....	54,095,091	....	62,080,062	....	5,841,772	....	1,607,857
Total, 1946 .	53,929,447	450,060,212	29,705,380	242,177,121	2,651,950	20,552,803	10,700,676	74,558,929
At merchant plants	12,383,485	122,963,480	....	....	2,354,146	18,155,950	1,489,098	12,323,410
At furnace plants	41,540,962	327,096,732	29,705,380	242,177,121	297,804	2,396,853	9,211,578	61,735,519
Total, 1945	62,094,288	470,190,339	34,365,834	256,729,973	2,803,736	19,568,952	12,544,788	81,414,131

State	Sold - Continued							
	Foundry 4/		Domestic		Industrial and other (including water gas) 5/		Total	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Alabama	379,214	$4,040,354	129,369	$894,505	370,778	$3,350,259	941,183	$8,749,134
California	....	....	5,147	(3)	1,858	(3)	7,005	(3)
Colorado	937	(3)	507	(3)	23,903	(3)	25,347	(3)
Illinois	314,565	4,178,697	239,496	2,470,487	80,763	772,144	1,583,846	16,493,795
Indiana	364,012	(3)	236,625	1,829,143	109,025	(3)	2,202,926	20,741,246
Maryland	....	....	....	....	....	....	....	....
Massachusetts	81,729	(3)	706,682	(3)	150,558	(3)	947,358	(3)
Michigan	414,473	(3)	431,875	4,113,303	138,815	1,412,704	1,131,281	12,355,644
Minnesota	12,538	(3)	281,361	3,305,394	46,465	(3)	340,364	4,018,279
New Jersey	49,548	(3)	557,367	(3)	398,432	(3)	1,005,347	(3)
New York	29,499	(3)	911,668	8,543,947	443,461	(3)	2,718,537	23,597,564
Ohio	255,878	3,121,654	258,629	1,983,952	641,205	5,482,588	2,042,709	17,842,841
Pennsylvania	216,499	2,707,352	449,240	3,924,589	320,813	2,995,913	5,820,236	35,726,668
Tennessee	37,864	(3)	....	....	75,728	(3)	113,592	(3)
Utah	....	....	4,706	(3)	61,748	(3)	84,103	(3)
West Virginia	79,004	(3)	30,111	205,041	78,319	(3)	596,598	4,092,895
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	337,908	4,572,940	704,302	7,724,891	329,606	3,449,908	1,932,474	19,656,217
Undistributed	....	13,836,553	....	13,982,602	....	13,308,746	....	23,492,312
Total, 1946	2,573,668	32,457,550	4,947,085	48,977,854	3,271,477	30,772,262	21,492,906	186,766,595
At merchant plants ..	2,021,463	25,625,263	3,907,557	41,221,515	2,688,334	25,892,929	10,106,452	105,563,117
At furnace plants ...	552,205	6,832,287	1,039,528	7,756,339	583,143	4,879,333	11,386,454	81,203,478
Total, 1945	2,338,033	26,833,646	6,574,526	57,124,329	3,479,261	28,643,684	24,936,608	194,015,790

1/ Comprises 68,539 tons valued at $669,345 used in foundries; 801,353 tons, $5,956,376 to make producer gas; 1,429,785 tons, $11,012,922 to make water gas; and 352,273 tons, $2,914,160 for other purposes. 2/ Includes 8,791,275 tons valued at $57,666,275 sold to financially affiliated plants. 3/ Included under "Undistributed." 4/ Includes 2,344 tons valued at $16,213 sold to financially affiliated plants. 5/ Includes 583,904 tons valued at $5,230,353 for manufacture of water gas and 186,906 tons, $1,585,360 for other industrial use sold to financially affiliated plants; and 942,837 tons, $9,198,354 for manufacture of water gas sold to other consumers.

TABLE 7. - BEEHIVE COKE PRODUCED AND SOLD OR USED BY PRODUCER IN THE UNITED STATES IN 1946, BY STATES

State	Produced		Used by producer -				Sold	
			In blast furnaces		For other purposes		Furnace 1/	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Colorado	58,761	(2)	....	....	......	....	....	....
Kentucky	85,400	(2)	....	....	......	....	67,186	(2)
Pennsylvania	4,027,167	$31,627,135	51,367	$581,918	937	$9,478	3,104,010	$23,404,994
Utah	5,234	(2)	....	....	......	....	3,400	(2)
Virginia	171,242	1,619,144	....	....	......	....	44,532	426,185
West Virginia	220,597	1,913,713	....	....	142	1,292	23,941	194,717
Undistributed	....	1,509,178	....	....	......	....	....	728,102
Total: 1946	4,568,401	36,669,170	51,367	581,918	1,079	10,770	3,243,069	24,753,998
1945	5,213,893	38,349,703	240,547	1,884,251	76,435	718,976	3,851,752	27,630,827

State	Sold - Continued							
	Foundry		Domestic		Industrial and other (including water gas) 3/		Total	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Colorado	346	(2)	....	....	55,865	(2)	56,211	(2)
Kentucky	....	....	....	....	18,214	(2)	85,400	(2)
Pennsylvania	292,421	$2,686,526	127,531	$1,004,734	422,638	$3,618,649	3,946,600	$30,714,903
Utah	431	(2)	....	....	1,097	(2)	4,928	(2)
Virginia	26,378	270,861	2,340	19,586	98,214	905,313	171,464	1,621,945
West Virginia	34,419	336,656	19,777	161,930	141,875	1,214,643	220,012	1,907,946
Undistributed	....	8,030	....	....	....	744,024	....	1,480,156
Total: 1946	353,995	3,302,073	149,648	1,186,250	737,903	6,482,629	4,484,615	35,724,950
1945	254,762	2,155,918	200,982	1,461,402	622,057	4,755,292	4,929,553	36,003,439

1/ Includes 1,210,447 tons valued at $8,278,178 sold to financially affiliated plants for blast furnace use.
2/ Included under "Undistributed." 3/ Includes 53,939 tons valued at $549,481 sold to financially affiliated plants for other industrial use and 190,438 tons, $1,652,029 for manufacture of water gas sold to other consumers.

TABLE 8. - STOCKS OF FURNACE, FOUNDRY, AND DOMESTIC COKE AND OF BREEZE IN THE UNITED STATES ON JANUARY 1, 1947, BY STATES, IN NET TONS

State	Coke				Breeze
	Furnace	Foundry	Domestic and other	Total	
Oven coke:					
Alabama	61,436	4,347	5,092	70,875	11,765
California	1,398	......	3,136	4,534	32,939
Colorado	2,760	......	....	2,760	2,145
Illinois	20,716	799	2,856	24,371	71,060
Indiana	57,139	1,482	18,733	77,354	48,912
Maryland	27,798	......	....	27,798	193,584
Massachusetts	464	329	64,215	65,008	9,042
Michigan*	6,383	1,341	3,571	11,295	13,483
Minnesota	1,014	......	36,471	37,485	42,083
New Jersey	....	......	36,998	36,998	10,687
New York	27,032	25	166,202	193,259	50,168
Ohio	124,086	2,376	9,859	136,321	101,932
Pennsylvania	96,435	393	22,113	118,941	71,703
Tennessee	1,174	909	1,685	3,768	....
Utah	10,826	......	18,013	28,839	7,816
West Virginia	5,860	187	11,038	17,085	30,113
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	1,242	377	34,603	36,222	14,820
	445,763	12,565	434,585	892,913	712,252
At merchant plants	9,257	9,630	331,818	350,705	106,591
At furnace plants	436,506	2,935	102,767	542,208	605,661
Beehive coke:					
Colorado	....	......	2,550	2,550	....
Pennsylvania	30,045	798	854	31,697	2,951
Utah	....	489	....	489	....
Virginia	705	9	178	892	20
West Virginia	....	212	13	225	....
	30,750	1,508	3,595	35,853	2,971

TABLE 9. - STOCKS OF BITUMINOUS COAL AT OVEN-COKE PLANTS IN THE UNITED STATES AT THE END OF EACH MONTH, 1937 AND 1943-46, IN NET TONS

Month	1937	1943	1944	1945	1946
January	8,030,871	9,952,627	6,137,165	5,694,501	5,665,131
February	8,687,389	9,778,403	6,382,553	5,610,111	6,392,605
March	9,638,317	9,850,617	6,280,880	5,452,042	8,269,360
April	8,543,774	9,732,267	5,929,623	4,456,204	4,116,899
May	8,187,883	9,219,153	5,891,893	4,428,452	2,565,010
June	7,770,256	7,142,587	6,127,041	5,128,071	3,629,535
July	7,432,741	6,818,746	5,708,408	4,752,624	3,871,156
August	7,455,932	6,811,435	5,927,586	4,502,647	5,229,600
September	7,760,533	6,590,622	6,173,834	4,624,488	5,925,815
October	8,066,938	6,657,479	6,396,922	3,665,833	6,593,083
November	8,114,094	5,819,664	6,737,442	4,607,947	6,355,321
December	7,273,403	6,305,514	6,111,538	4,873,546	5,238,762

TABLE 10. - OVENS COMPLETED AND ABANDONED IN THE UNITED STATES IN 1946 AND TOTAL NUMBER IN EXISTENCE AT END OF YEAR, BY STATES

State	Plants in existence Dec. 31	Ovens: In existence Dec. 31		Ovens: New		Ovens: Abandoned during year	Ovens: Under construction Dec. 31	
		Number	Annual capacity (net tons of coke)	Number	Annual capacity (net tons of coke)		Number	Annual capacity (net tons of coke)
Oven coke:								
Alabama	8	1/1,490	6,547,300	....	....	....	63	443,500
California	1	90	340,000	....	....	....	....	....
Colorado	1	188	813,000	....	....	....	2/74	327,000
Connecticut	1	70	(3)	....	....	....	....	....
Illinois	8	4/856	3,899,500	....	....	26	....	....
Indiana	5	1,863	9,341,800	47	144,000	....	....	....
Kentucky	1	120	(3)	....	....	....	....	....
Maryland	1	422	2,124,000	....	....	....	61	396,000
Massachusetts	2	215	1,289,800	....	....	....	....	....
Michigan	4	568	2,926,200	....	....	....	....	....
Minnesota	3	196	985,600	....	....	....	....	....
Missouri	1	64	(3)	....	....	....	....	....
New Jersey	2	304	1,427,000	37	137,500	13	....	....
New York	8	1,142	6,219,800	....	....	....	....	....
Ohio	15	2,099	10,228,800	....	....	....	210	970,700
Pennsylvania	13	3,564	17,797,200	....	....	61	204	1,112,200
Rhode Island	1	65	(3)	....	....	....	....	....
Tennessee	1	44	242,000	....	....	....	....	....
Texas	2	5/125	706,000	....	....	....	....	....
Utah	2	308	1,202,800	....	....	....	....	....
West Virginia	5	506	2,696,500	....	....	....	212	1,204,400
Wisconsin	2	195	(3)	....	....	....	....	....
Undistributed	....	......	2,325,300	....	....	....	....	....
	87	14,494	71,112,600	84	281,500	100	824	4,453,800
At merchant plants	32	3,205	14,459,500	84	281,500	39	8	45,700
At furnace plants	55	11,289	56,653,100	....	....	61	816	4,408,100
Beehive coke:								
Colorado	1	160	85,000	....	....	....	....	....
Kentucky	1	195	172,000	4	3,500	....	....	....
Pennsylvania	53	10,547	7,172,900	589	400,500	11	....	....
Utah	1	297	147,000	....	....	....	....	....
Virginia	5	750	376,200	1	500	....	....	....
West Virginia	7	915	473,900	102	57,000	....	....	....
	68	12,864	8,427,000	6/696	461,500	11	....	....

1/ 240 ovens idle entire year. 2/ Completed but idle. 3/ Included under "Undistributed." 4/ 1 plant abandoned in August. 5/ Idle entire year. 6/ Old ovens rehabilitated.

TABLE 11. - VERTICAL SLOT-TYPE OVENS OF EACH KIND IN THE UNITED STATES AT END OF 1946, BY STATES

State	Koppers	Koppers-Becker	Semet-Solvay	Wilputte	All others 1/	Total
Alabama	459	486	420	125	....	1,490
California	....	90	....	....	....	90
Colorado	116	72	....	....	....	188
Connecticut	....	70	....	....	....	70
Illinois	375	198	120	163	....	856
Indiana	406	812	161	484	....	1,863
Kentucky	....	....	120	....	....	120
Maryland	300	122	....	....	....	422
Massachusetts	....	160	....	55	....	215
Michigan	....	222	346	....	....	568
Minnesota	155	41	....	....	....	196
Missouri	56	....	....	....	8	64
New Jersey	165	139	....	....	....	304
New York	150	608	180	152	52	1,142
Ohio	1,238	431	293	137	....	2,099
Pennsylvania	1,550	1,674	88	132	120	3,564
Rhode Island	40	25	....	....	....	65
Tennessee	....	....	24	20	....	44
Texas	....	125	....	....	....	125
Utah	....	308	....	....	....	308
West Virginia	154	207	....	145	....	506
Wisconsin	100	15	80	....	....	195
	5,264	5,805	1,832	1,413	180	14,494
At merchant plants	741	1,113	962	329	60	3,205
At furnace plants	4,523	4,692	870	1,084	120	11,289

1/ Comprises 52 American Foundation, 120 Cambria, and 8 Piette.

TABLE 12. - QUANTITY AND VALUE AT OVENS OF COAL USED IN MANUFACTURING COKE IN THE UNITED STATES IN 1946, BY STATES

State	Coal used (net tons)	Cost of coal		Coal per ton of coke	
		Total	Average	Net tons	Cost
Oven coke:					
Alabama	6,530,336	$32,375,532	$4.96	1.40	$6.94
California	420,297	(1)	(1)	1.61	(1)
Colorado	832,415	(1)	(1)	1.49	(1)
Illinois	4,505,323	30,196,121	6.70	1.41	9.46
Indiana	9,198,959	62,090,861	6.75	1.38	9.33
Maryland	2,296,212	(1)	(1)	1.38	(1)
Massachusetts	1,497,347	(1)	(1)	1.43	(1)
Michigan	3,471,559	20,730,941	5.97	1.39	8.29
Minnesota	1,192,679	8,183,014	6.86	1.39	9.51
New Jersey	1,738,942	(1)	(1)	1.38	(1)
New York	7,108,999	47,711,634	6.71	1.41	9.46
Ohio	11,924,954	68,236,447	5.72	1.41	8.07
Pennsylvania	18,597,362	89,163,514	4.79	1.45	6.97
Tennessee	314,340	(1)	(1)	1.37	(1)
Utah	807,594	(1)	(1)	1.66	(1)
West Virginia	3,072,457	11,797,384	3.84	1.42	5.46
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	2,849,711	18,337,072	6.43	1.35	8.71
Undistributed	....	51,720,980	6.54	1.44	9.40
	76,359,486	440,543,500	5.77	1.42	8.17
At merchant plants	17,197,125	111,390,675	6.48	1.39	8.99
At furnace plants	59,162,361	329,152,825	5.56	1.42	7.92
Beehive coke:					
Colorado	90,831	(1)	(1)	1.55	(1)
Kentucky	133,522	(1)	(1)	1.56	(1)
Pennsylvania	6,285,177	22,431,414	3.57	1.56	5.57
Utah	11,553	(1)	(1)	2.21	(1)
Virginia	291,852	1,022,973	3.51	1.70	5.97
West Virginia	354,489	1,282,379	3.62	1.61	5.81
Undistributed	....	985,914	4.18	1.58	6.60
	7,167,424	25,722,680	3.59	1.57	5.63

1/ Included under "Undistributed."

TABLE 13. - AVERAGE COST PER NET TON OF COAL CARBONIZED AT OVEN-COKE PLANTS IN THE UNITED STATES, 1937 AND 1943-46, BY STATES

State	1937	1943	1944	1945	1946	State	1937	1943	1944	1945	1946
Alabama	$2.33	$3.60	$4.03	$4.47	$4.96	Pennsylvania	$2.98	$3.96	$4.28	$4.40	$4.79
Illinois	4.62	5.62	6.04	6.16	6.70	West Virginia	2.54	3.19	3.32	3.56	3.84
Indiana	4.71	5.85	6.11	6.23	6.75	All other States 1/	4.53	5.59	5.72	5.94	6.51
Michigan	4.16	4.57	5.39	5.55	5.97	United States average	3.74	4.75	5.08	5.28	5.77
Minnesota	5.24	6.02	6.35	6.52	6.86						
New York	4.55	5.59	5.88	6.04	6.71	Cost of coal per ton of coke	5.27	6.70	7.16	7.45	8.17
Ohio	3.76	4.73	5.03	5.27	5.72						

1/ Includes California, Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, New Jersey, Rhode Island, Tennessee, Texas, Utah, and Wisconsin.

TABLE 14. - COAL CONSUMED IN COKE OVENS IN THE UNITED STATES, 1937 AND 1945-46, BY MONTHS, IN NET TONS

Month	1937			1945			1946		
	Vertical slot type	Beehive	Total	Vertical slot type	Beehive	Total	Vertical slot type	Beehive	Total
January	6,198,700	426,600	6,625,300	7,913,800	717,600	8,631,400	5,415,600	656,400	6,072,000
February	5,679,900	458,500	6,138,400	7,196,200	711,600	7,907,800	3,765,900	595,000	4,360,900
March	6,387,000	556,800	6,943,800	8,045,700	832,300	8,878,000	7,116,500	749,700	7,866,200
April	6,183,800	480,800	6,664,600	7,447,800	591,000	8,038,800	5,519,300	34,500	5,553,800
May	6,368,500	509,700	6,878,200	7,858,800	871,300	8,730,100	3,670,900	44,600	3,715,500
June	5,729,200	430,500	6,159,700	7,335,200	873,500	8,208,700	6,330,200	593,600	6,923,800
July	6,217,200	441,700	6,658,900	7,687,400	856,700	8,544,100	7,565,100	757,300	8,322,400
August	6,425,800	401,100	6,826,900	7,176,900	711,200	7,888,100	7,795,600	847,000	8,642,600
September	6,220,700	392,800	6,613,500	7,123,600	466,800	7,590,400	7,587,400	784,400	8,371,800
October	5,664,800	351,600	6,016,400	5,616,500	313,700	5,930,200	7,828,500	899,900	8,728,400
November	4,527,000	264,000	4,791,000	6,795,400	574,400	7,369,800	7,001,100	583,700	7,584,800
December	3,972,800	212,700	4,185,500	7,339,500	614,500	7,954,000	6,763,400	621,300	7,384,700
	69,575,400	4,926,800	74,502,200	87,536,800	8,134,600	95,671,400	76,359,500	7,167,400	83,526,900

TABLE 15. - COAL PURCHASED FOR MANUFACTURING OVEN COKE IN THE UNITED STATES IN 1946, BY STATES WHERE PRODUCED AND WHERE CONSUMED AND BY MERCHANT AND FURNACE PLANTS, IN NET TONS

State where coal consumed	Coal produced in -																
	Alabama	Arkansas	Colorado	Illinois	Indiana	Kentucky	Maryland	New Mexico	Ohio	Oklahoma	Pennsylvania	Tennessee	Utah	Virginia	West Virginia	Wyo-ming	Total
Alabama:																	
Merchant plants	984,030	......	......	......	......	......	......	......	..	......	......	......	......	......	112,310	..	1,096,340
Furnace plants	5,443,246	......	......	......	......	......	......	......	..	......	......	......	......	......	5,845	..	5,449,091
Total Alabama	6,427,276	......	......	......	......	......	......	......	..	......	......	......	......	......	118,155	..	6,545,431
California:																	
Furnace plant	......	34,566	......	......	......	......	......	457	..	21,017	......	......	361,994	......	......	56	418,090
Colorado:																	
Furnace plant	......	60,140	581,190	......	......	......	......	310,300	..	11,420	......	......	......	......	......	..	963,050
Illinois:																	
Merchant plants	......	......	......	......	......	39,520	......	......	..	......	29,290	......	......	......	682,401	..	751,211
Furnace plants	......	674	......	214,545	36,987	1,441,055	......	......	..	......	360,870	......	......	......	1,644,058	..	3,698,189
Total Illinois	......	674	......	214,545	36,987	1,480,575	......	......	..	......	390,160	......	......	......	2,326,459	..	4,449,400
Indiana:																	
Merchant plants	......	......	......	......	......	......	......	......	..	......	......	......	......	65,500	906,320	..	971,820
Furnace plants	......	......	......	176,205	14,115	3,975,770	......	......	..	......	134,000	......	......	590,241	3,521,369	..	8,411,700
Total Indiana	......	......	......	176,205	14,115	3,975,770	......	......	..	......	134,000	......	......	655,741	4,427,689	..	9,383,520
Maryland:																	
Furnace plant	......	......	......	......	......	25,796	......	......	..	......	94,604	......	......	......	2,220,289	..	2,340,689
Massachusetts:																	
Merchant plants	......	......	......	......	......	10,745	......	......	..	......	......	......	......	88,171	1,394,511	..	1,493,427
Michigan:																	
Merchant plants	......	......	......	......	......	......	......	......	..	......	220,483	......	......	174,858	556,569	..	951,910
Furnace plants	......	......	......	......	......	1,201,587	......	......	..	......	236,417	......	......	108,394	911,955	..	2,458,353
Total Michigan	......	......	......	......	......	1,201,587	......	......	..	......	456,900	......	......	283,252	1,468,524	..	3,410,263
Minnesota:																	
Merchant plant	......	175	......	29,381	......	78,976	......	......	..	......	......	9,483	......	......	290,895	..	408,910
Furnace plants	......	......	......	......	......	530,016	......	......	..	......	17,807	......	......	......	275,277	..	823,100
Total Minnesota	......	175	......	29,381	......	608,992	......	......	..	......	17,807	9,483	......	......	566,172	..	1,232,010
New Jersey:																	
Merchant plants	......	......	......	......	......	119,304	......	......	..	......	......	......	......	130,161	1,541,764	..	1,791,229
New York:																	
Merchant plants	......	......	......	......	......	380,983	......	......	..	......	1,542,351	......	......	93,294	1,784,502	..	3,801,130
Furnace plants	......	......	......	......	......	162,032	......	......	..	......	2,349,585	......	......	61,232	803,602	..	3,376,451
Total New York	......	......	......	......	......	543,015	......	......	..	......	3,891,936	......	......	154,526	2,588,104	..	7,177,581
Ohio:																	
Merchant plants	......	......	......	......	......	111,666	......	......	..	......	9,066	......	......	120,925	1,293,669	..	1,535,326
Furnace plants	......	......	......	......	......	2,065,823	316	......	53	......	4,822,982	......	......	40,000	3,476,558	..	10,405,732
Total Ohio	......	......	......	......	......	2,177,489	316	......	53	......	4,832,048	......	......	160,925	4,770,227	..	11,941,058
Pennsylvania:																	
Merchant plants	......	......	......	......	......	......	......	......	..	......	32,897	......	......	......	778,439	..	811,336
Furnace plants	......	......	......	......	......	219,187	5,378	......	..	......	15,706,352	......	......	1,698	2,262,285	..	18,194,900
Total Pennsylvania	......	......	......	......	......	219,187	5,378	......	..	......	15,739,249	......	......	1,698	3,040,724	..	19,006,236
Tennessee:																	
Furnace plant	16,603	......	......	......	......	89,748	......	......	..	......	......	198,491	......	......	27,594	..	332,436
Utah:																	
Furnace plants	......	54	......	......	......	......	......	......	..	......	......	......	818,759	......	......	..	818,813
West Virginia:																	
Merchant plants	......	......	......	......	......	......	......	......	..	......	5,738	......	......	......	781,512	..	787,250
Furnace plants	......	......	......	......	......	......	......	......	..	......	2,063,997	......	......	......	247,831	..	2,311,828
Total West Virginia	......	......	......	......	......	......	......	......	..	......	2,069,735	......	......	......	1,029,343	..	3,099,078
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin:																	
Merchant plants	......	......	......	......	32,329	89,810	......	......	..	......	55,714	......	......	18,655	2,633,508	..	2,830,016
	6,443,879	95,609	581,190	420,131	83,431	10,542,018	5,694	310,757	53	32,437	27,682,153	207,974	1,180,753	1,493,129	28,153,063	56	77,232,327
At merchant plants	984,030	175	......	29,381	32,329	831,004	......	......	..	......	1,895,539	9,483	......	691,564	12,756,400	..	17,229,905
At furnace plants	5,459,849	95,434	581,190	390,750	51,102	9,711,014	5,694	310,757	53	32,437	25,786,614	198,491	1,180,753	801,565	15,396,663	56	60,002,422

TABLE 16. - COAL CHEMICAL MATERIALS OBTAINED FROM COKE-OVEN OPERATIONS IN THE UNITED STATES IN 1946 1/
(Exclusive of screenings or breeze)

Product	Production	Sales			On hand December 31
		Quantity	Value		
			Total	Average	
Tar ... gallons ..	596,868,745	377,998,582	$21,284,137	$0.056	26,728,081
Tar derivatives:					
Creosote oil, distillate as such ... do ..	20,785,839	20,474,218	2,532,895	.124	671,582
Creosote oil, in coal tar solution ... do ..	10,336,986	9,063,960	1,224,454	.135	485,317
Tar acid oil ... do ..	12,953,198	13,270,360	1,612,971	.122	410,316
Pitch of tar:					
Soft 2/ ... net tons ..	303,087	131	1,686	12.870	10,316
Hard 3/ ... do ..	207,403	176	1,489	8.460	370
Other tar derivatives 4/ ...	...	...	1,570,722	...	...
Ammonia:					
Sulfate ... pounds ..	1,287,504,417	1,284,471,366	18,024,763	.014	66,822,811
Liquor (NH_3 content) ... do ..	49,982,452	47,042,597	1,417,296	.030	1,289,128
	...	...	19,442,059	...	...
Sulfate equivalent of all forms ... do ..	1,487,434,225	1,472,641,754	...	...	71,979,323
NH_3 equivalent of all forms ... do ..	371,858,556	368,160,439	...	...	17,994,831
Gas:					
Used under boilers, etc. ... M cubic feet ..	5/783,637,016	29,473,813	3,307,201	.112	...
Used in steel or affiliated plants do ..		265,545,711	31,172,118	.117	...
Distributed through city mains ... do ..		157,234,511	44,928,697	.285	...
Sold for industrial use ... do ..		28,235,551	3,776,663	.134	...
	5/783,637,016	480,489,586	83,184,679	.173	...
Light oil and derivatives:					
Crude light oil ... gallons ..	6/206,914,333	13,199,230	1,057,863	.080	3,784,767
Benzol:					
Motor ... do ..	27,398,866	29,146,443	2,553,191	.088	758,239
All other grades ... do ..	109,728,963	110,378,789	14,217,634	.129	4,859,463
Toluol, crude and refined ... do ..	16,519,763	16,136,385	3,313,317	.205	2,276,295
Xylol, crude and refined ... do ..	5,986,250	5,869,310	1,330,568	.227	503,463
Solvent naphtha ... do ..	4,401,158	4,105,059	529,644	.129	446,589
Other light oil products ... do ..	7,572,226	5,911,018	579,256	.098	462,152
	7/171,607,226	184,796,234	23,581,473	.128	...
Naphthalene, crude ... pounds ..	71,605,138	71,769,750	1,602,739	.022	2,347,217
Pyridine:					
Crude ... gallons ..	329,661	362,928	241,858	.666	69,723
Refined ... do ..	95,343	107,857	357,083	3.311	1,931
Picoline ... do ..	25,412	39,888	66,734	1.673	16,187
Sodium phenolate ... do ..	2,448,547	2,385,342	150,321	.063	164,179
Other coal chemical materials 8/ ...	...	...	534,575	...	...
Value of all coal chemical materials sold ...	...	...	9/157,389,875	...	...

1/ Includes products of tar distillation conducted by coke-oven operators under same corporate name. 2/ Softening point less than 110° F. 3/ Softening point over 160° F. Includes some medium pitch of tar reported by one producer. 4/ Cresylic acid, cresols, crude anthracine, phenol, pitch coke, and road tar. 5/ Includes gas used for heating ovens and gas wasted. 6/ Refined on premises to make derived products shown: 198,593,963 gallons. 7/ Total gallons of derived products. 8/ Ammonium thiocyanate, cyanogen sludge, dicyclopentadiene, secondary oil, sodium prussiate, sulfur, and vented vapors. 9/ Exclusive of value of breeze production which was $11,717,566 in 1946.

TABLE 17. - VALUE OF COAL CHEMICAL MATERIALS AND OF COKE, INCLUDING BREEZE, PER TON OF COKE PRODUCED IN THE UNITED STATES, 1937 AND 1943-46

Product	1937	1943	1944	1945	1946
Ammonia and its compounds ...	$0.326	$0.355	$0.324	$0.356	$0.361
Light oil and its derivatives (including naphthalene) ...	.435	.546	.552	.503	.467
Surplus gas sold or used ...	1.483	1.330	1.403	1.413	1.542
Tar sold ...	.375	.385	.327	.352	.395
Miscellaneous products ...	.066	.178	.167	.148	.154
	2.685	2.854	2.773	2.772	2.919
Tar used, not sold ...	.127	.078	.131	.095	.071
Breeze produced ...	.162	.191	.198	.202	.217
	2.974	3.123	3.102	3.069	3.207
Value of coke produced ...	5.026	6.654	7.140	7.572	8.345
Total value of coke and coal chemical materials ...	8.000	9.777	10.242	10.641	11.552

TABLE 18. - COKE-OVEN TAR PRODUCED, USED BY PRODUCER, AND SOLD IN THE UNITED STATES IN 1946, BY STATES, IN GALLONS

State	Produced		Used by producer -			
	Total	Per ton of coal coked	For refining or topping	As fuel under boilers	In open hearth or affiliated plants	Otherwise
Alabama	52,021,128	7.97	....	305,724	18,606,374	98,657
California	4,257,739	10.13	4,309,574	....	....	45,250
Colorado	8,556,000	10.28	8,321,441	....	....	....
Illinois	30,225,340	6.71	....	302,704	....	....
Indiana	54,613,734	5.94	14,341,245	....	257,162	1,730,304
Maryland	16,940,865	7.38	....	....	225,362	....
Massachusetts	11,307,012	7.55	....	....	....	....
Michigan	24,995,010	7.20	....	....	....	468
Minnesota	7,559,421	6.34	....	....	1,900,516	4,000
New Jersey	12,902,794	7.42	....	....	....	....
New York	57,522,999	8.09	13,769,623	....	....	37,923
Ohio	82,326,943	6.90	1,492,142	447,041	9,108,746	537,558
Pennsylvania	169,296,640	9.10	112,827,196	....	31,278,693	324,234
Tennessee	2,373,277	7.55	....	....	....	....
Utah	9,171,343	11.36	....	....	3,320,877	1,066
West Virginia	32,264,045	10.50	....	....	....	636
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	20,534,455	7.21	....	....	....	550
Total, 1946	596,868,745	7.82	155,061,221	1,055,469	64,697,730	2,780,646
At merchant plants	132,678,443	7.72	393,019	....	....	20,473
At furnace plants	464,190,302	7.85	154,668,202	1,055,469	64,697,730	2,760,173
Total, 1945	696,307,311	7.95	178,575,329	575,121	107,218,838	3,633,314

State	Sold -					On hand Dec. 31
	For use as fuel 1/	For refining into tar products	Total			
			Quantity	Value		
				Total	Average	
Alabama	....	32,517,021	32,517,021	$1,902,155	$0.058	2,567,787
California	....	....	....	....	.....	115,663
Colorado	....	80,277	80,277	(2)	(2)	336,238
Illinois	3,627,774	26,977,917	30,605,691	1,645,810	.054	1,056,934
Indiana	1,920,341	36,700,969	38,621,310	2,177,954	.056	3,414,858
Maryland	....	16,973,029	16,973,029	(2)	(2)	1,441,020
Massachusetts	....	11,296,842	11,296,842	(2)	(2)	91,478
Michigan	....	25,813,420	25,813,420	1,393,926	.054	525,888
Minnesota	....	5,565,550	5,565,550	324,111	.058	753,912
New Jersey	....	12,807,794	12,807,794	(2)	(2)	607,000
New York	474,729	44,135,246	44,609,975	2,546,732	.057	2,169,165
Ohio	4,640,775	66,817,681	71,458,456	4,171,381	.058	3,488,593
Pennsylvania	298,174	26,272,284	26,570,458	1,480,456	.056	7,586,352
Tennessee	....	2,369,440	2,369,440	(2)	(2)	21,261
Utah	5	6,089,712	6,089,717	(2)	(2)	1,047,085
West Virginia	....	32,190,049	32,190,049	1,874,241	.058	580,265
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	....	20,429,553	20,429,553	1,095,947	.053	924,582
Undistributed	....	....	....	2,671,424	.054	....
Total, 1946	10,961,798	367,036,784	377,998,582	21,284,137	.056	26,728,081
At merchant plants	....	132,605,390	132,605,390	7,154,564	.054	4,153,576
At furnace plants	10,961,798	234,431,394	245,393,192	14,129,573	.058	22,574,505
Total, 1945	26,628,037	383,871,287	410,499,324	21,827,890	.053	30,859,495

1/ Comprises 558,601 gallons sold to affiliated plants and 10,403,197 gallons to other purchasers. 2/ Included under "Undistributed."

TABLE 19. - COKE-OVEN AMMONIA PRODUCED AND SOLD IN THE UNITED STATES IN 1946, BY STATES, IN POUNDS

State	Active plants	Sulfate equivalent of all forms		Produced as -	
		Quantity	Per ton of coal coked	Sulfate	Liquor (NH_3 content)
Alabama	7	148,228,385	22.70	135,458,585	3,192,450
California	1	11,016,772	26.21	11,016,772	....
Colorado	1	17,828,016	21.42	17,828,016	....
Illinois	8	79,057,011	19.34	79,057,011	....
Indiana	5	159,118,289	17.30	134,590,301	6,131,997
Maryland	1	45,883,476	19.98	45,883,476	....
Massachusetts	2	25,994,460	17.36	25,447,420	136,760
Michigan	4	72,991,585	21.03	26,154,117	11,709,367
Minnesota	3	19,949,960	16.73	19,949,960	....
New Jersey	2	31,490,470	18.11	31,490,470	....
New York	8	137,160,855	19.29	107,969,279	7,297,894
Ohio	15	220,200,023	18.47	173,001,959	11,799,516
Pennsylvania	13	386,033,241	20.76	384,001,101	508,035
Tennessee	1	6,867,919	21.85	6,867,919	....
Utah	2	20,262,208	25.09	20,262,208	....
West Virginia	3	51,009,203	21.72	51,009,203	....
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	5	54,342,352	19.35	17,516,620	9,206,433
Total, 1946	81	1,487,434,225	19.79	1,287,504,417	49,982,452
At merchant plants	30	328,752,993	19.73	197,708,265	32,761,182
At furnace plants	51	1,158,681,232	19.80	1,089,796,152	17,221,270
Total, 1945	84	1,749,437,753	20.22	1,528,585,257	55,213,124

State	Sold as -				On hand Dec. 31	
	Sulfate		Liquor (NH_3 content)		Sulfate	Liquor (NH_3 content)
	Quantity	Value	Quantity	Value		
Alabama	136,731,313	$1,967,661	3,204,660	(1)	2,593,614	91,311
California	10,901,840	(1)	....	....	213,965	....
Colorado	15,874,655	(1)	....	....	2,804,361	....
Illinois	79,585,026	1,104,543	....	....	3,178,259	....
Indiana	135,239,640	1,801,507	6,268,656	$162,878	9,770,230	151,111
Maryland	45,377,830	(1)	....	....	2,003,817	....
Massachusetts	25,692,500	(1)	130,890	(1)	591,180	15,790
Michigan	25,130,520	(1)	9,977,877	(1)	1,524,400	292,796
Minnesota	19,076,550	263,031	....	....	2,602,232	....
New Jersey	30,974,970	(1)	....	....	902,240	....
New York	107,454,587	1,555,231	7,011,141	220,648	3,296,363	170,532
Ohio	176,017,992	2,397,920	10,557,872	329,420	4,020,064	330,410
Pennsylvania	382,093,356	5,121,274	510,621	(1)	28,694,549	34,102
Tennessee	7,016,240	(1)	....	....	127,872	....
Utah	19,649,742	(1)	....	....	1,281,004	....
West Virginia	49,392,955	670,988	....	....	2,156,103	....
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	18,261,650	256,878	9,380,880	270,549	1,062,558	203,076
Undistributed	....	2,885,730	....	433,801	....	....
Total, 1946	1,284,471,366	18,024,763	47,042,597	1,417,296	66,822,811	1,289,128
At merchant plants	198,882,138	2,858,884	35,488,882	1,062,718	6,034,154	964,422
At furnace plants	1,085,589,228	15,165,879	11,553,715	354,578	60,788,657	324,706
Total, 1945	1,602,123,800	20,534,078	51,439,125	1,556,101	64,350,762	1,907,665

1/ Included under "Undistributed."

TABLE 20. - COKE-OVEN CRUDE LIGHT OIL PRODUCED IN THE UNITED STATES AND DERIVED PRODUCTS OBTAINED AND SOLD IN 1946, BY STATES, IN GALLONS

State	Active plants	Produced		Refined on premises 1/	Derived products			On hand Dec. 31
		Total	Per ton of coal coked		Produced	Sold 2/		
						Quantity	Value	
Alabama	7	18,086,578	2.77	17,509,374	15,122,047	14,941,494	$1,905,480	211,387
California	1	1,483,771	3.53	1,480,574	1,282,293	1,144,339	(3)	14,573
Colorado	1	2,600,241	3.12	2,548,586	2,525,198	2,430,857	(3)	52,100
Illinois	7	11,349,152	2.64	8,296,664	6,914,688	6,894,296	927,429	222,802
Indiana	5	20,733,734	2.25	21,672,237	19,215,736	18,965,902	2,502,036	404,588
Maryland	1	8,874,938	3.87	8,867,604	7,315,417	8,035,446	(3)	83,692
Michigan	4	9,526,543	2.74	4,774,012	4,064,966	4,138,640	(3)	129,200
New York	8	18,179,147	2.56	29,225,386	25,113,832	25,831,367	3,617,312	284,027
Ohio	15	32,749,525	2.75	28,717,034	22,967,259	23,232,691	2,910,435	476,213
Pennsylvania	13	56,221,356	3.02	54,724,800	48,262,929	48,808,712	6,076,987	1,433,860
Tennessee	1	773,984	2.46	773,984	711,357	763,020	(3)	7,066
Utah	2	3,456,224	4.28	3,429,540	2,839,386	2,640,435	(3)	57,362
West Virginia	5	10,681,587	3.48	9,802,204	8,640,394	7,249,981	1,071,570	109,184
Connecticut, Kentucky, Massachusetts, Missouri, New Jersey, and Wisconsin	7	12,197,553	2.14	6,771,964	6,631,724	6,519,824	928,002	298,713
Undistributed	....	....	.....	....	....	....	2,584,359	....
Total, 1946	77	206,914,333	2.77	198,593,963	171,607,226	171,597,004	22,523,610	3,784,767
At merchant plants	26	35,750,205	2.21	34,850,081	31,374,571	30,371,053	4,194,408	980,008
At furnace plants	51	171,164,128	2.93	163,743,882	140,232,655	141,225,951	18,329,202	2,804,759
Total, 1945	80	245,687,253	2.84	234,802,231	202,669,566	191,275,133	27,887,495	4,187,551

1/ Comprises 191,656,098 gallons of crude light oil from own production and 6,937,865 gallons purchased from other coke-oven plants. 2/ Excludes 13,199,230 gallons of crude light oil valued at $1,057,863 sold as such. 3/ Included under "Undistributed."

TABLE 21. - COKE-OVEN GAS PRODUCED AND SOLD IN THE UNITED STATES IN 1946, BY STATES, IN M CUBIC FEET

State	Active plants	Produced	Used in heating ovens	Surplus sold or used			Wasted
				Quantity	Value		
					Total	Average	
Alabama	7	66,563,169	30,767,881	34,722,316	$3,139,918	$0.090	1,072,972
California	1	4,694,932	362,673	4,184,033	(1)	(1)	148,226
Colorado	1	9,388,804	5,038,573	4,288,976	(1)	(1)	61,255
Illinois	9	45,245,753	13,652,805	31,061,874	4,523,559	.146	531,074
Indiana	5	90,463,761	40,266,802	48,164,698	9,741,162	.202	2,032,261
Maryland	1	23,183,811	7,984,638	14,316,721	(1)	(1)	882,452
Massachusetts	2	15,523,828	2,344,673	13,132,080	(1)	(1)	47,075
Michigan	4	34,134,378	6,046,842	27,928,019	4,199,967	.150	159,517
Minnesota	3	12,561,845	5,273,855	7,209,709	1,930,858	.268	78,281
New Jersey	2	18,663,973	5,109,529	13,554,444	(1)	(1)	....
New York	8	75,942,644	20,614,721	54,932,115	16,645,799	.303	395,808
Ohio	15	118,128,622	54,769,238	61,933,555	8,355,447	.135	1,425,829
Pennsylvania	13	192,168,936	82,176,034	109,134,530	14,163,789	.130	858,372
Tennessee	1	2,958,764	1,287,670	1,649,019	(1)	(1)	22,075
Utah	2	9,713,238	2,234,839	7,210,010	(1)	(1)	268,389
West Virginia	5	34,070,755	10,682,607	22,360,810	2,084,721	.093	1,027,338
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	6	30,229,803	5,072,145	24,706,677	6,325,999	.256	450,981
Undistributed	....	....	....	....	12,073,460	.207	....
Total, 1946	85	783,637,016	293,685,525	480,489,586	83,184,679	.173	9,461,905
At merchant plants	32	178,572,615	40,135,615	136,354,903	39,149,451	.287	2,082,097
At furnace plants	53	605,064,401	253,549,910	344,134,683	44,035,228	.128	7,379,808
Total, 1945	87	904,476,118	337,128,344	554,253,412	87,745,022	.158	13,094,362

1/ Included under "Undistributed."

TABLE 22. - DISPOSAL OF SURPLUS COKE-OVEN GAS IN THE UNITED STATES IN 1946, BY STATES, IN M CUBIC FEET

State	Used by producer -					
	Under boilers			In steel or other affiliated plant		
	Quantity	Value		Quantity	Value	
		Total	Average		Total	Average
Alabama	5,147,816	$291,252	$0.057	21,156,373	$1,955,887	$0.092
California	....	....	.....	4,184,033	(1)	(1)
Colorado	....	....	.....	4,288,976	(1)	(1)
Illinois	4,731,035	476,692	.101	6,010,401	981,924	.163
Indiana	2,867,765	(1)	(1)	35,457,222	4,777,800	.135
Maryland	....	....	.....	8,685,270	(1)	(1)
Massachusetts	3,619	(1)	(1)	....	....	.....
Michigan	3,538,042	(1)	(1)	22,510,074	3,368,265	.150
Minnesota	224,755	12,253	.055	2,032,566	(1)	(1)
New Jersey	....	....	.....	18,243	(1)	(1)
New York	1,537,565	154,886	.101	12,953,176	(1)	(1)
Ohio	3,170,562	478,054	.151	43,315,118	5,617,259	.130
Pennsylvania	3,927,295	(1)	(1)	80,758,306	8,069,595	.100
Tennessee	273,091	(1)	(1)	....	....	.....
Utah	1,735,577	(1)	(1)	4,613,423	(1)	(1)
West Virginia	1,138,068	(1)	(1)	19,562,530	1,791,543	.092
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	1,178,623	176,672	.150	....	....	.....
Undistributed	....	1,717,392	.127	....	4,609,845	.125
Total, 1946	29,473,813	3,307,201	.112	265,545,711	31,172,118	.117
At merchant plants	6,750,703	747,900	.111	6,609,132	842,374	.127
At furnace plants	22,723,110	2,559,301	.113	258,936,579	30,329,744	.117
Total, 1945	32,061,903	3,098,350	.097	324,294,221	36,972,600	.114

State	Sold					
	Distributed through city mains			For industrial purposes		
	Quantity	Value		Quantity	Value	
		Total	Average		Total	Average
Alabama	7,256,491	$780,781	$0.108	1,161,636	$111,998	$0.096
California	....	....	.....	....	....	.....
Colorado	....	....	.....	....	....	.....
Illinois	19,901,882	3,014,656	.151	418,556	50,287	.120
Indiana	8,116,516	4,027,399	.496	1,723,195	(1)	(1)
Maryland	5,631,451	(1)	(1)	....	....	.....
Massachusetts	13,022,482	(1)	(1)	105,979	(1)	(1)
Michigan	....	....	.....	1,879,903	(1)	(1)
Minnesota	4,952,388	(1)	(1)	....	....	.....
New Jersey	13,536,201	(1)	(1)	....	....	.....
New York	38,852,239	14,521,570	.374	1,589,135	(1)	(1)
Ohio	5,283,291	1,113,501	.211	10,164,584	1,146,633	.113
Pennsylvania	18,044,261	4,779,228	.265	6,404,668	(1)	(1)
Tennessee	1,375,928	(1)	(1)	....	....	.....
Utah	708,174	(1)	(1)	152,836	(1)	(1)
West Virginia	....	....	.....	1,660,212	(1)	(1)
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	20,553,207	5,929,952	.289	2,974,847	219,375	.074
Undistributed	....	10,761,610	.274	....	2,248,370	.166
Total, 1946	157,234,511	44,928,697	.286	28,235,551	3,776,663	.134
At merchant plants	107,982,090	35,555,286	.329	15,012,978	2,003,891	.133
At furnace plants	49,252,421	9,373,411	.190	13,222,573	1,772,772	.134
Total, 1945	166,178,375	43,532,085	.262	31,718,913	4,141,987	.131

1/ Included under "Undistributed."

TABLE 23. - CRUDE NAPHTHALENE PRODUCED AND SOLD BY COKE-PLANT OPERATORS IN THE UNITED STATES, 1941-46

Year	Produced (pounds)	Sold			Receipts per ton of coke (cents)
		Pounds	Value		
			Total	Average per pound (cents)	
1941	84,046,676	83,879,395	$1,522,518	$0.018	$0.026
1942	95,612,788	95,039,639	1,941,626	.020	.031
1943	98,096,899	98,031,058	2,038,829	.021	.033
1944	103,041,023	103,839,789	2,094,596	.020	.031
1945	87,677,299	86,936,517	1,806,967	.021	.029
1946	71,605,138	71,769,750	1,602,739	.022	.030

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

For release July 28, 1947.

MINERAL MARKET REPORTS
MMS No. 1538.

METAL MINING IN UTAH, 1946 - FINAL ANNUAL FIGURES

Prolonged labor strikes and continued shortages of labor drove 1946 production of gold, silver, copper, lead, and zinc in Utah to the lowest levels in recent years, according to the Salt Lake Office of the Bureau of Mines, United States Department of the Interior. Copper bore the brunt of the precipitous decline, and output slumped nearly 48 percent below that in 1945; gold dropped 36 percent, silver 33, lead 25, and zinc 16 percent.

Despite appreciable increases in average prices in 1946 for all metals except gold ($35 per ounce)--silver from $0.711+ to $0.808; copper, $0.135 to $0.162; lead, $0.086 to $0.109; zinc $0.115 to $0.122--the value of the five metals decreased 33 percent from $90,018,641 in 1945 to $60,202,627 in 1946. Of the State total value in 1946, copper contributed nearly 62 percent, zinc over 11, lead 11, gold 10, and silver nearly 6 percent.

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Mine production of gold, silver, copper, lead, and zinc in Utah, 1945-46, in terms of recovered metals

Metals	1945		1946	
	Quantity	Value	Quantity	Value
Gold, fine ounces..................	279,979	$9,799,265	178,533	$6,248,655
Silver, fine ounces................	6,106,545	4,342,432	4,118,453	3,327,710
Copper, pounds.....................	452,752,000	61,121,520	228,568,000	37,028,016
Lead, pounds.......................	81,634,000	7,020,524	61,422,000	6,694,998
Zinc, pounds.......................	67,260,000	7,734,900	56,584,000	6,903,248
Total value........................	-	90,018,641	-	60,202,627

Gold. - The yield of gold in Utah in 1946 experienced a sharp decline of 101,446 ounces from the 1945 output. Copper ore continued to be the chief source of gold, supplying 75 percent of the State output; zinc-lead ore followed with 13 percent, and siliceous ores furnished most of the remainder. One placer was active in 1946. The leading gold producers in 1946 were the Utah Copper mine, New Park property, Tintic Bullion mine, United States & Lark group, and the National Tunnel & Mines Co., Calumet, Butterfield, and Tintic Standard properties, which together produced 96 percent of the State gold.

Silver. - The slump of 1,988,092 ounces from the 1945 output of 6,106,545 ounces dropped Utah production of silver in 1946 to the lowest figure since 1880. Zinc-lead ore, zinc ore, lead ore, and lead-copper ore together supplied over 59 percent of the State total silver in 1946, copper ore 30 percent, and siliceous ores 9 percent; the remainder came from old zinc slag fumed. The Utah Copper mine

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Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

was the leading silver producer, followed in order by the United States & Lark group, New Park, Chief Consolidated, Park Utah Consolidated, Silver King Coalition and Calumet properties. From these seven properties came 82 percent of the State silver in 1946.

Copper. - The output of copper in Utah in 1946 was the lowest since 1938, owing mainly to a five-month labor strike at the Utah Copper mine of the Kennecott Copper Corp., although all the principal copper-producing operations showed declines from 1945. The Utah Copper mine, the National Tunnel & Mines Co. property, and the Columbia group and the Big Indian property of the Ohio Copper Co. supplied 98 percent of the State copper in 1946.

Lead. - Lead production in Utah in 1946 was the smallest since 1899. Outstanding in the slump were the United States & Lark group and the Tintic Standard properties. About 83 percent of the State lead output was recovered from zinc-lead ores concentrated, and most of the remainder from lead, siliceous, and zinc-lead ores smelted and old zinc slag fumed. The United States & Lark group retained first place among State lead producers, followed by New Park, Chief Consolidated, Calumet, Park Utah Consolidated, and Silver King Coalition properties, Tooele old slag dump, Tintic Standard mine, Butterfield property, and Horn Silver mine. These 10 properties furnished 89 percent of the State lead in 1946.

Zinc. - Mainly because of a labor strike, output of ore in 1946 at the United States & Lark group, the leading State zinc producer, fell 43 percent below that in 1945. Small declines in zinc output were registered at a number of other important operations, but substantial increases were made by the New Park Mining Co. and the Chief Consolidated Mining Co. Zinc-lead ore concentrated supplied 79 percent of the State zinc in 1946, and old zinc slag fumed most of the remainder. The leading producers of zinc were the United States & Lark group, Tooele old slag dump, and the New Park, Chief Consolidated, Park Utah Consolidated, Calumet, Silver King Coalition, and Pacific Bridge properties, which together contributed 91 percent of the total zinc.

Leading districts. - Among the three leading districts, the West Mountain (Bingham) experienced the greatest loss in production in 1946. Ore output dropped 48 percent below that in 1945, and the total value of the metal output declined 40 percent from $79,131,715 in 1945 to $47,429,473 in 1946. The district contributed 79 percent of the State total gold, 49 percent of the silver, 98 percent of the copper, 40 percent of the lead, and 27 percent of the zinc. The Park City region produced more than twice as much ore in 1946 as in 1945 and forged to first place among State zinc-producing districts. The total value of the five metals produced increased 22 percent from $4,562,505 in 1945 to $5,544,668 in 1946. Ore production in the Tintic district in 1946 decreased nearly 18 percent from that in 1945, but the district registered gains in gold and zinc output. Total value of the five metals produced increased 3 percent from $2,926,511 in 1945 to $3,025,794 in 1946.

Ore production. - Ore output from the 88 lode mines in Utah in 1946 (89 in 1945) declined 47 percent from 24,723,184 tons in 1945 to 13,245,691 tons in 1946. Most of the loss was in copper ore and zinc-lead ore from the West Mountain (Bingham) district. Of the total ore produced in 1946, copper ore comprised 12,471,208 tons; zinc-lead ore, 576,450 tons; zinc ore and old zinc slag, 105,222 tons; siliceous gold and silver ores 79,875 tons; lead ore, 11,700 tons; and lead-copper ore, 1,236 tons.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

FOR RELEASE JULY 31, 1947

MINERAL MARKET REPORT
M.M.S. NO. 1539

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GYPSUM AND GYPSUM PRODUCTS - FINAL ANNUAL FIGURES FOR 1946

The gypsum industry in 1946 produced and imported a total of 7,086,538 short tons of gypsum, according to the Bureau of Mines, United States Department of the Interior, setting a new-supply record, 10 percent above the previous record set in 1926, and 64 percent above 1945. Mine output reached 5,629,398 tons, nearly equal to the production record of 5,678,302 tons that was established in 1925, and 1,457,140 tons were imported.

Calcined production, obtained from 50 plants distributed through 23 States, was 68 percent higher than in 1945. The number of active plants increased by 8 and the number of kilns by 19.

Of the products sold, building materials made the largest gains. Portland-cement retarder was up 71 percent, base-coat plasters 135 percent, and lath 91 percent. Large increases were also noted for the other building plasters, and for wallboard. Price difficulties inhibited sheathing sales and the demand for laminated board declined.

Industrial plasters, used in bedding plate glass for polishing, in making molds and patterns for pottery and for nonferrous castings, and in numerous miscellaneous applications in shop and factory, showed gratifying increases over 1945; that used for orthopedic and dental plasters declined somewhat.

The capacity of the gypsum industry to produce plaster and board has not been canvassed since 1941. In that year 36 board machines, having a capacity of 13 million square feet of 3/8-inch lath per 24-hour day or over 4 billion square feet a year, were reported. There has been considerable variation in capacity owing to the closing of some plants and increasing the output of others. The over-all effect seems to have been an increase to at least 4-3/4 billion square feet, in view of the fact that actual board output was at the annual rate of 4 billion square feet in the closing months of 1946. Capacity will be further augmented in 1947 when several plants, now under construction, are placed in operation.

The salient statistics of domestic production, and of products from domestic, imported, and byproduct gypsum are presented in the following tables.

Prepared by Charles L. Harness and M. G. Downey, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch.

(OVER)

Salient statistics of the gypsum industry in the United States, 1943-46

	1943	1944	1945	1946
Active establishments 1/....	85	77	75	80
Crude gypsum: 2/				
Mined......... ..short tons	3,877,541	3,761,234	3,811,723	5,629,398
Imported........ do	231,323	342,462	508,762	1,457,140
Apparent supply do	4,108,864	4,103,696	4,320,485	7,086,538
Calcined gypsum produced: 3/				
Short tons................	2,557,730	2,363,143	2,485,090	4,169,662
Value.....................	$14,751,587	$13,841,399	$14,473,566	$29,272,960
Gypsum products sold: 3/				
Uncalcined uses:				
Short tons..............	1,233,727	1,056,276	1,147,797	1,641,279
Value...................	$3,114,789	$2,953,564	$3,432,727	$5,105,789
Industrial uses:				
Short tons..............	163,500	200,473	157,796	207,178
Value...................	$2,258,981	$2,550,649	$2,326,363	$3,160,988
Building uses:				
Value...................	$53,722,762	$50,196,006	$54,389,504	$88,927,786
Total value...........	$59,096,532	$55,700,219	$60,148,594	$97,194,563
Gypsum and gypsum products—				
Imported for consumption..	$304,154	$394,603	$548,697	$1,833,088
Exported..................	$283,720	$489,980	$1,502,668	$1,065,248

1/ Each mine, plant, or combination mine and plant is counted as 1 establishment.
2/ Excludes byproduct gypsum.
3/ Made from domestic, imported, and byproduct crude gypsum.

Crude gypsum mined in the United States, 1945-46, by States

State	1945			1946		
	Active mines	Short tons	Value	Active mines	Short tons	Value
California........	5	455,319	$967,507	6	574,345	$1,315,699
Iowa..............	5	430,843	569,964	5	560,094	1,172,500
Michigan.......	4	640,186	862,028	4	1,120,070	2,171,979
Nevada............	3	368,246	732,253	3	490,253	1,164,083
New York..........	7	557,902	1,262,989	7	814,999	1,961,157
Texas.............	6	407,640	511,869	6	771,633	1,630,929
Other States 1/..	19	951,587	2,077,714	21	1,298,004	3,025,482
	49	3,811,723	6,984,324	52	5,629,398	12,441,829

1/ By groups of States as follows—1945: Arizona (1), Arkansas (1), and Kansas (2)—120,422 tons, $160,156; Colorado (3), Montana (2), South Dakota (1), and Wyoming (1)—129,587 tons, $243,214; Ohio (2) and Virginia (2)—177,595 tons, $1,356,592; Oklahoma (2), and Utah (2)—223,983 tons, $317,752. 1946: Arizona (2), Arkansas (1) Kansas (2)—212,231 tons, $456,361; Colorado (3), Montana (2), South Dakota (1), Wyoming (2)—199,895 tons, $474,704; Ohio (2) and Virginia (2)—584,755 tons, $1,482,269; Oklahoma (2), and Utah (2)—301,123 tons, $612,148.

Calcined gypsum produced in the United States, 1945-46, by districts 1/

District	1945		1946	
	Short tons	Value	Short tons	Value
New Hampshire, Massachusetts, and Connecticut......................	50,102	$394,764	155,268	$1,228,340
Eastern New York, New Jersey, Georgia, and Florida............	204,075	1,551,450	623,875	4,862,620
Western New York.................	394,994	1,951,849	545,686	3,735,566
Ohio and Virginia................	309,500	1,961,566	379,531	2,858,570
Michigan and Indiana.............	374,047	2,222,934	639,764	4,554,987
Iowa.............................	286,422	1,467,605	443,966	3,066,319
Kansas and Oklahoma..............	178,736	1,164,396	216,003	1,654,360
Texas............................	273,102	1,288,755	518,587	3,291,439
Colorado, Wyoming, South Dakota, Montana, and Utah...............	96,158	707,092	150,638	1,086,582
California and Nevada............	317,354	1,763,155	496,344	2,934,177
	2,485,090	14,473,566	4,169,662	29,272,960

1/ Made from domestic, imported, and byproduct crude gypsum.

Gypsum products sold or used in the United States, 1945-46, by uses

Use	1945		1946		
	Short tons	Value	Short tons	Value	Percent change in tonnage
Uncalcined:					
Portland-cement retarder....	664,247	$1,502,689	1,135,853	$2,949,860	+71
Agricultural gypsum........	462,217	1,715,982	471,902	1,855,515	+2
Other uses..................	21,333	214,056	33,524	300,414	+57
Total uncalcined..........	1,147,797	3,432,727	1,641,279	5,105,789	+43
Industrial:					
Plate-glass and terra-cotta plasters..................	20,317	136,378	36,654	284,716	+80
Pottery plasters...........	30,807	414,187	44,808	627,913	+45
Orthopedic & dental plasters	13,907	416,712	13,322	439,471	-4
Other industrial uses.......	92,765	1,359,086	112,394	1,808,888	+21
Total industrial..........	157,796	2,326,363	207,178	3,160,988	+31
Building:					
Cementitious:					
Plasters:					
Base-coat................	640,276	6,103,402	1,507,115	16,088,863	+135
Sanded...................	68,485	428,631	113,983	864,579	+66
To mixing plants........	10,938	70,827	15,553	121,857	+42
Gauging and molding.....	88,800	1,084,902	165,061	2,230,931	+86
Prepared finishes.......	6,663	213,211	11,753	445,864	+76
Insulating and roof-deck	35,300	286,302	70,956	623,844	+101
Other...................	14,918	681,930	21,326	1,190,576	+43
Keene's cement...........	14,158	217,723	32,476	482,717	+129
Total cementitious.....	879,538	9,086,928	1,938,223	22,049,231	+120
Prefabricated:					
Lath 1/.....................	445,497	8,177,308	865,682	18,550,334	2/+91
Wallboard 3/................	1,023,537	28,994,151	1,517,035	43,699,483	2/+48
Sheathing 4/................	102,692	2,304,165	79,673	2,021,691	2/-24
Laminated board 5/..........	125,222	4,002,216	22,837	792,560	2/-82
Tile 6/.....................	104,943	1,824,736	108,721	1,814,487	2/ +5
Total prefabricated.......	1,801,891	45,302,576	2,593,948	66,878,555	2/+44
Total building uses.....	- - - - -	54,389,504	- - - - -	88,927,786	
Grand total value............	- - - - -	60,148,594	- - - - -	97,194,563	

1/ 1945: 599,431 M square feet; 1946: 1,147,353 M square feet.

2/ Percent of change in square footage.

3/ 1945: 1,286,912 M square feet; 1946: 1,900,779 M square feet.

4/ 1945: 100,627 M square feet; 1946: 76,914 M square feet.

5/ Square footage in terms of component board—1945: 116,908 M square feet; 1946: 21,317 M square feet.

6/ Includes partition, roof, floor, soffit, shoe, and all other gypsum tiles and planks—1945: 17,988 M square feet; 1946: 18,865 M square feet.

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For release August 7, 1947.

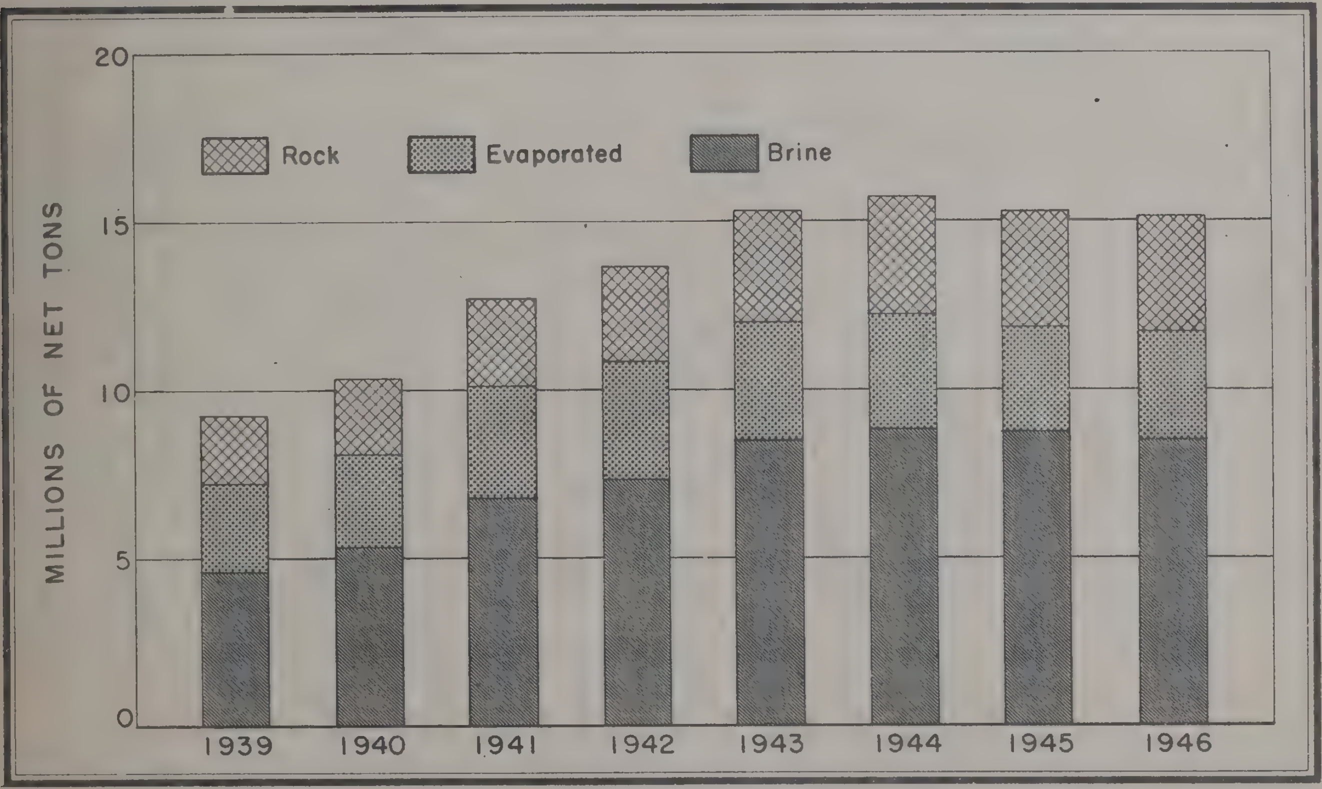
MINERAL MARKET REPORT
MMS No. 1540

SALT PRODUCTION IN 1946

According to the reports of producers to the Bureau of Mines, the United States produced 15,132,145 short tons of salt valued at $44,816,498 in 1946--a 2-percent decline in quantity from 1945.

Three types of salt, shown in the chart (Fig. 1), contributed to the total as follows: almost 56 percent was brine (salt content); 23 percent was rock salt; and 21 percent was evaporated salt.

The salt was produced in 13 States and Puerto Rico, at 73 plants owned by 50 companies.



Trends in the quantity of rock salt, evaporated salt, and brine (in terms of salt content) sold or used by producers in the United States, 1939-46.

Prepared by Florence E. Harris and E. M. Tucker, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division; Economics and Statistics Branch.

Salt production in the United States, 1935-39 (av.) and 1945-46, short tons

	1935-39 (average)	1945	1946
Sold or used by producers:			
Manufactured (evaporated)..........	2,507,374	3,182,570	3,249,457
In brine........................	4,205,587	8,705,831	8,470,680
Rock salt.......................	1,947,254	3,505,740	3,412,008
Total quantity..................	8,660,215	15,394,141	15,132,145
Total value 1/	$23,405,612	$43,914,406	$44,816,498
Average value 1/	$2.70	$2.85	$2.96

1/ Values are f.o.b. mine or refinery and do not include cost of cooperage or containers.

Production by States. - The Midwestern States—Kansas, Michigan, and Ohio—supplied 51 percent of total production in 1946, output of evaporated salt predominating in the dry salt types.

Salt sold or used by producers in the United States, 1945-46, by States

	Quantity			Quantity		
	Short tons	Percent of total	Value	Short tons	Percent of total	Value
California......	694,609	4	$3,424,711	729,092	5	$3,358,060
Kansas..........	855,806	6	3,837,850	815,018	5	4,014,919
Louisiana.......	1,867,689	12	4,465,643	1,846,522	12	4,516,271
Michigan........	4,285,493	28	14,942,443	4,334,202	29	15,711,074
New Mexico......	9,980	(1)	20,694	8,677	(1)	16,399
New York........	2,862,224	19	10,327,013	2,813,782	19	10,153,274
Ohio............	2,764,926	18	3,997,759	2,645,995	17	4,160,011
Puerto Rico.....	12,513	(1)	81,200	12,411	(1)	83,494
Texas...........	1,100,791	7	2/1,336,162	1,098,589	7	1,356,676
Utah............	122,997	1	363,997	121,669	1	339,505
West Virginia...	370,260	2	903,759	272,841	2	896,894
Other States 3/.	446,853	3	213,175	433,347	3	209,921
	15,394,141	100	2/43,914,406	15,132,145	100	44,816,498

1/ Less than 0.5 percent.
2/ Revised.
3/ Includes Nevada, Oklahoma, and Virginia.

Methods of Manufacture. - The accompanying table shows the output of salt obtained by the various processes used in 1946.

Salt sold or used by producers in the United States, 1945-46, by methods of manufacture

	1945		1946	
	Short tons	Value	Short tons	Value
Evaporated:				
Bulk:				
Open pans or grainers...	1/ 637,529	1/ $5,961,143	558,026	$5,905,704
Vacuum pans............	1/ 1,846,011	1/ 14,144,622	1,840,061	14,168,587
Solar..................	1/ 446,112	1/ 1,712,171	553,056	1,971,947
Pressed blocks...........	1/ 252,918	1/ 2,553,161	298,314	2,942,966
Rock:				
Bulk.....................	3,410,929	12,115,237	3,314,948	12,437,435
Pressed blocks...........	94,811	849,154	97,060	771,669
Salt in brine (sold or used as such)...	1/ 8,705,831	1/ 6,578,918	8,470,680	6,618,190
	15,394,141	43,914,406	15,132,145	44,816,498

1/ Revised.

Rock salt. - The 1946 output of rock salt was from 19 plants in 8 States.

Rock salt sold by producers in the United States, 1942-46

	Short tons	Value		Short tons	Value
1942............	2,802,287	$9,623,461	1945............	3,505,740	$12,964,391
1943............	3,259,138	11,180,884	1946............	3,412,008	13,209,104
1944............	3,448,238	12,225,057			

Evaporated salt. - In 1946, 49 evaporated salt plants in 12 States and Puerto Rico were productive.

Evaporated salt sold or used by producers in the United States, 1945-46, by States

	1945		1946	
	Short tons	Value	Short tons	Value
California..................	581,730	$3,114,191	595,747	$2,988,775
Kansas......................	337,697	2,676,919	338,532	2,829,111
Louisiana...................	65,264	548,922	87,834	587,624
Michigan....................	879,007	7,379,970	953,183	8,162,183
New York....................	490,246	5,347,891	466,115	5,025,740
Ohio........................	451,317	3,486,752	456,227	3,615,003
Puerto Rico.................	12,513	81,200	12,411	83,494
Utah........................	116,239	332,408	115,248	310,610
West Virginia...............	159,129	858,155	136,320	883,393
Other States 1/.............	2/ 89,428	2/ 544,689	87,840	503,271
	2/ 3,182,570	2/ 24,371,097	3,249,457	24,989,204

1/ Nevada, New Mexico, Oklahoma, and Texas.
2/ Revised.

Pressed blocks. - The all-time high total of 395,374 short tons of pressed blocks was manufactured by 21 evaporated-salt plants and 8 rock-salt plants in 1946.

Pressed-salt blocks sold by original producers of the Salt in the United States, 1942-1946

Year	From evaporated salt		From rock salt		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1942....	240,354	$2,228,062	67,490	$569,014	307,844	$2,797,076
1943....	269,064	2,598,873	77,912	663,027	346,976	3,266,900
1944....	274,216	2,797,015	79,063	724,456	353,279	3,521,471
1945....	242,632	2,479,109	94,811	849,154	337,443	3,328,263
1946....	298,314	2,942,966	97,060	771,669	395,374	3,714,635

Salt content of brine. - Fifteen plants in 7 States produced the brine salt in 1946. Although brine salt was down 3 percent from 1945, with relation to percentage of total salt produced in 1946, it was about the same--56 percent--as in 1945. Demand for chlorine and soda ash continued strong during 1946. A backlog of orders piled up that could not be satisfied because of a shortage of containers, transportation, and fuel. The bituminous coal strike affected soda-ash manufacture especially, inasmuch as it takes approximately one ton of coal to produce a ton of soda ash.

USES

In 1946, the first full year of peace, the most notable changes in the consumption of salt were in the decreases in brine used for soda ash and chlorine, and in dry salt used for meat packing and fish curing. There were increases for livestock, textile processing, water treatment, table and household purposes, and for "other food processing," and hides and leather.

"Other uses" in the accompanying table includes synthetic rubber manufacture, the output of which declined in 1946. Exclusive of the salt used for chlorine in rubber manufacture, about 100,000 tons of rock and evaporated salt were used for making synthetic rubber and rubber products. This is about half of what was used in 1945.

The use of salt for meat packing declined during the meat crisis of 1945-46 when there was a shortage of meat to be dressed. On the other hand, the quantity of salt used for livestock increased.

Much of the salt used for livestock originated in Kansas, Michigan, Ohio, and New York. The areas of maximum consumption naturally were in the greatest cattle-raising sections. More of the salt blocks are used in the northeastern and middle western States, whereas much of the lump salt for livestock is used in Texas and other southern areas.

Table salt is supplied chiefly by Michigan, New York, and Louisiana. Used everywhere in the United States, the greatest quantities are consumed in the largest centers of population.

Meat packing constitutes the third largest use of commercial salt, most of which is supplied by Kansas, Michigan, and New York. It is used chiefly in the great meat-packing centers in the Middle West and Northeastern sections of the country.

Most all salt-producing States supply salt for water treatment but California greatly exceeds any other State. Substantial quantities are produced for this purpose in Ohio, New York, Louisiana, Michigan, Kansas, and Texas, with small amounts from West Virginia.

Salt sold or used by producers in the United States, 1945–46, by classes and uses, in short tons

	1945			1946		
	Evaporated	Rock	Brine	Evaporated	Rock	Brine
Chlorine, bleaches, chlorates, etc.	1/ 347,700	644,916	1/ 1,540,359	337,513	594,659	1,454,682
Soda ash	(2)	-------	7,087,227	-------	-------	6,957,592
Dyes and organic chemicals	58,101	41,460	---------	56,991	53,547	---------
Soap (precipitant)	50,141	18,862	(2)	48,412	15,185	---------
Other chemicals	105,363	441,579	(2)	104,484	430,987	(2)
Textile processing	35,968	101,378	---------	37,050	121,176	---------
Hides and leather	105,227	161,049	---------	108,029	178,083	---------
Meat packing	362,202	360,744	---------	354,365	331,482	---------
Fish curing	36,123	71,571	---------	37,856	35,307	---------
Butter, cheese, and other dairy products	112,087	5,592	---------	121,447	5,647	---------
Canning and preserving	156,713	16,164	---------	167,249	21,725	---------
Other food processing	230,993	22,243	---------	240,799	24,885	---------
Refrigeration	45,449	235,904	---------	48,042	221,635	---------
Livestock	539,929	192,817	---------	599,537	192,344	---------
Highways, railroads, dust and ice control	10,149	307,656	---------	7,960	312,164	---------
Table and other household	472,106	210,175	---------	498,166	209,684	---------
Water treatment	179,544	196,842	(2)	212,248	213,197	(2)
Agriculture	42,753	14,013	---------	16,380	15,492	---------
Metallurgy	28,922	29,000	(2)	17,566	31,403	---------
Other uses 3/	263,100	433,775	78,245	235,363	403,406	58,406
	1/ 3,182,570	3,505,740	1/ 8,705,831	3,249,457	3,412,008	8,470,680

1/ Revised.
2/ Included under "Other uses".
3/ Includes also exports where use is not specified.

DISTRIBUTION

In the accompanying table, salt shipped to destinations within the State in which it is produced is added to that received from other States. As reshipments are disregarded the statistics represent only original shipments into States by producers.

Distribution (shipments) of evaporated and rock salt in the United States, 1945-46, by States of destination, in short tons

Destination	1945		1946	
	Evaporated	Rock	Evaporated	Rock
Alabama	9,787	66,581	14,670	40,181
Arizona	14,453	4,734	17,011	4,614
Arkansas	8,285	47,730	11,625	30,144
California	367,377	59,326	365,791	65,079
Colorado	38,628	32,284	37,654	16,805
Connecticut	15,772	12,341	15,598	14,749
Delaware	5,261	11,292	4,283	14,519
District of Columbia	5,932	2,448	5,728	2,075
Florida	8,822	33,464	11,046	36,825
Georgia	20,366	57,976	22,669	57,888
Idaho	17,442	1,996	18,782	811
Illinois	228,687	221,495	241,328	207,409
Indiana	98,072	63,059	99,555	63,086
Iowa	112,764	102,199	116,272	95,402
Kansas	54,644	130,090	53,459	135,976
Kentucky	32,961	99,007	34,863	96,974
Louisiana	6,866	130,469	13,932	133,062
Maine	16,090	43,840	13,886	56,203
Maryland	41,106	44,568	40,337	25,473
Massachusetts	61,661	70,503	55,470	71,478
Michigan	143,708	65,146	145,865	75,871
Minnesota	115,982	73,024	119,168	72,192
Mississippi	3,874	32,494	10,421	33,212
Missouri	79,981	85,839	82,168	78,148
Montana	22,200	2,870	23,475	3,280
Nebraska	59,531	67,572	19,576	58,266
Nevada	7,006	51,759	40,083	66,208
New Hampshire	4,839	49,731	5,191	52,778
New Jersey	99,537	178,354	113,680	141,116
New Mexico	6,809	22,229	3,312	20,324
New York	239,407	524,577	230,705	503,452
North Carolina	58,401	47,110	55,047	56,866
North Dakota	11,782	5,225	12,677	4,952
Ohio	204,954	144,880	213,335	132,489
Oklahoma	29,659	36,019	32,050	32,841
Oregon	42,989	298	42,625	415
Pennsylvania	155,320	131,908	160,844	134,577
Rhode Island	9,642	12,307	10,169	11,601
South Carolina	11,786	20,648	12,633	24,157
South Dakota	24,177	18,472	25,106	17,142
Tennessee	24,642	63,659	30,139	64,407
Texas	1/66,871	250,170	71,243	239,236
Utah	27,890	2,405	25,077	2,635
Vermont	5,281	13,253	5,028	15,428
Virginia	55,830	83,931	56,507	95,634
Washington	137,618	1,569	161,809	1,525
West Virginia	172,647	75,883	155,284	80,755
Wisconsin	123,200	34,304	133,638	38,238
Wyoming	9,757	3,589	11,704	4,233
Other 2/	62,274	171,113	46,939	181,277
	1/3,182,570	3,505,740	3,249,457	3,412,008

1/ Revised.

2/ Includes salt used in Puerto Rico (evaporated salt); exports to Africa, Canada Central America, Cuba, Mexico, Newfoundland, South America, West Indies, and other countries; shipments to Alaska, Hawaii, and Puerto Rico; and some shipments to unspecified destinations.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

24044

FOR RELEASE AUGUST 4, 1947

MINERAL MARKET REPORT
M.M.S. NO. 1541

DISTRIBUTION OF OVEN AND BEEHIVE COKE IN 1946

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INTRODUCTION

This study, the eleventh report published by the Bureau of Mines, United States Department of the Interior, on the distribution of oven and beehive coke during the calendar year 1946 was made possible by the cooperation of the producers of coke, who voluntarily supplied data on the distribution of their product according to geographic areas and principal uses. The coke is that produced in the familiar beehive and high-temperature vertical slot-type coke ovens and does not include low-temperature, reclaimed beehive, coal-gas retort, petroleum, and coal-tar pitch cokes. The term "byproduct coke," formerly used to designate the solid material produced in high-temperature vertical slot-type coke ovens, has been changed in this report to "oven coke." This change does not affect the statistics in any way and they are, therefore, comparable to those issued in previous years.

The accompanying tables show, by major uses, total oven and beehive coke and coke breeze consumed in each State; tonnages of coke consumed in each State grouped in nine geographic regions; and the origin and destination of shipments. It is believed that these summaries indicate the approximate size and nature of the market for coke in given States as well as principal sources and respective consuming areas they serve. All figures are in short, or net, tons of 2,000 pounds.

GENERAL SUMMARY

The total distribution of coke in 1946, as reported by producers, amounted to 58,387,297 tons, a decrease of 13 percent from 1945 and 21 percent below the record set in 1944. Coke, the principal operating fuel in iron blast furnace and foundry operations, was in extremely heavy demand throughout the year and large requirements stimulated a vigorous expansion program in the oven-coke industry and prohibited the curtailment of beehive operations. At the end of the year 10,181 beehive ovens were in operation, an increase of 1,559 over January, and a total of 824 new vertical slot-type ovens with an annual coke capacity of 4,454,000 tons were under construction, mainly at steel plants where existing facilities were unable to meet requirements.

The quantity of coke used for smelting iron in blast furnaces in 1946 dropped sharply from 1945 but was equivalent to 75 percent of all deliveries of large coke (fig. 1). The increased activity of foundry operations resulted in a 14 percent gain in shipments of foundry coke over 1945 and the total was the highest reported since 1927. The overall decline in coke production was the principal cause for the slight decreases in the distribution of coke for making producer gas, water gas, and for other industrial purposes. The heavy demand for industrial coke throughout the year resulted in the curtailment of domestic coke deliveries to the lowest point since 1927. This market, which is a highly competitive one, has tendencies toward the opposite trend of industrial activity and total deliveries in 1946 were 4,965,918 tons, or 49 percent, below the tonnage distributed to the domestic coke trade in 1936.

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CONSUMPTION BY STATES

Pennsylvania, the leading coke producing and consuming State, accounted for 26 percent of the total United States consumption. Ohio was next with 16 percent, New York and Indiana followed with 9 percent each, and Illinois and Alabama consumed 8 percent and 7 percent, respectively.

Furnace coke was used in 17 States in 1946; however, 78 percent of the total was consumed in 5 States - Pennsylvania, Ohio, Indiana, Alabama, and Illinois. Consumption in Maryland, Michigan, and West Virginia represented 10 percent of the total. Coke for foundry use was shipped to all States but Nevada and Wyoming with Michigan, Ohio, and Pennsylvania accounting for 38 percent of the total consumption. Coke was used in the manufacture of producer gas in 10 States and for producing water gas in 33. New York was the leading consumer of water-gas coke with 32 percent of the total, followed by West Virginia, New Jersey, and Virginia which together used 35 percent. Coke classified as "other industrial" was widely used with every State sharing in the consumption of 2,455,011 tons and in addition, 190,542 tons were exported. Domestic coke was used in all but 9 States with New York consuming about one-fifth of the total.

COMPARATIVE CONSUMPTION 1940 AND 1946

Table 2 shows the shift in the supply of coke in 9 geographic regions since 1940. The Southwest, Mountain, and Pacific Region with new blast furnace capacity in Utah and California showed the largest increase in the use of coke with a gain of 68 percent over 1940. The Southeast Region registered a gain of 17 percent principally because of substantial increases in the use of blast-furnace coke in West Virginia, Kentucky, and Tennessee. Increases in metallurgical coke consumption at the expense of domestic coke in the Lake Dock and the Illinois-Indiana Region resulted in a net gain in total coke consumption over 1940 in both regions. The large decline in the use of domestic coke in the New England, Michigan, and Middle Atlantic Regions accounted for the decreases in the total consumption in each of these areas. The decline in the consumption of coke in Ohio was due to the drop in the use of blast-furnace coke which was not offset by increases in the use of foundry and other industrial coke.

SOURCE OF COKE CONSUMED IN EACH STATE

Illinois consumed the largest tonnage of out-of-State coke in 1946, most of which was for blast-furnace use. The amount shipped into that State was 1,768,550 tons, of which 93 percent was supplied by Indiana and Kentucky. Ohio ranked second in total out-of-State receipts, obtaining 1,545,665 tons from 11 other States, Pennsylvania furnishing 73 percent. Pennsylvania and New York were the only other States receiving more than half a million tons each from other States. Of the producing States Virginia received the largest percentage of out-of-State coke with 75 percent of her total consumption coming from 7 other States.

DISTRIBUTION OF COKE PRODUCED IN EACH STATE

Coke shipments from Alabama were the most widespread in 1946, extending to 30 other States, including the far west and north and in addition, 26,325 tons were exported. The total tonnage, however, was relatively small and represented but 12 percent of the total distributed by producers in this State. Pennsylvania, as in previous years, was the leading State in quantity of interstate shipments sending 2,461,737 tons to 23 other States. This State was also the principal exporter accounting for 26 percent of the total tonnage shipped to foreign countries. Indiana and Kentucky, together, ranked second sending 1,967,518 tons to 19 States with Illinois receiving 83 percent of the total shipments. The only other State that shipped more than half a million tons across its border was West Virginia.

SCREENINGS OR BREEZE

The preceding discussion relates to large coke only and does not consider screenings or breeze. As breeze has a lower value per ton, its movement is more restricted and most of the 4,803,097 tons distributed was used not far from producing plants. For this reason, Pennsylvania, Ohio, New York, and Indiana, the leading producing States were the leading consumers of breeze and accounted for 57 percent of the total tonnage distributed. Reports submitted by producers indicated that 65 percent of the total breeze distributed was used for raising steam, 1 percent for making producer gas, and 34 percent for other industrial purposes.

EXPORTS OF COKE AND BREEZE

Exports of coke and coke breeze in 1946, as reported by producers, decreased 31 percent from 1945 and totaled 665,051 tons. As in previous surveys, exports of coke reported by producers were considerably lower than the foreign shipments reported to the United States Department of Commerce by producers and wholesalers. The demand for coke in virtually all foreign countries in 1946 exceeded the supply, and exports from the United States would have been much greater had more coke been available in this country. Canada, as in previous years, was the principal foreign market for American coke receiving 86 percent of all exports. Exports to Canada, however, were 29 percent below the 1945 total. The distribution, by major uses and final destinations, of coke exports for the years 1940 and 1944-46 are shown below.

OVEN AND BEEHIVE COKE AND BREEZE EXPORTED BY PRODUCERS, 1940 AND 1944-46, BY USES, IN NET TONS

Uses	1940	1944	1945	1946
Furnace	81,627	17,862	31,094	37,126
Foundry	98,337	104,253	165,894	149,978
Other industrial, including water gas	190,317	180,681	257,066	193,448
Domestic	303,796	386,346	450,401	255,323
Breeze	46,498	35,517	59,663	29,176
	720,575	724,659	964,118	665,051

OVEN AND BEEHIVE COKE AND BREEZE EXPORTED BY PRODUCERS, 1940 AND 1944-46, BY DESTINATION, IN NET TONS

Destination	1940	1944	1945	1946
North America:				
Canada	640,888	678,008	805,371	572,602
Mexico	16,908	3,825	7,527	6,063
West Indies	24,299	30,842	33,902	20,259
Other North America	48	....	....	....
Central America	229	149	105	....
South America	6,173	8,960	8,277	10,249
Europe	14,350	986	28,406	20,258
Africa	....	....	609	....
Hawaii and the Philippines	3,132	....	....	....
Unknown	14,548	1,889	79,921	35,620
	720,575	724,659	964,118	665,051

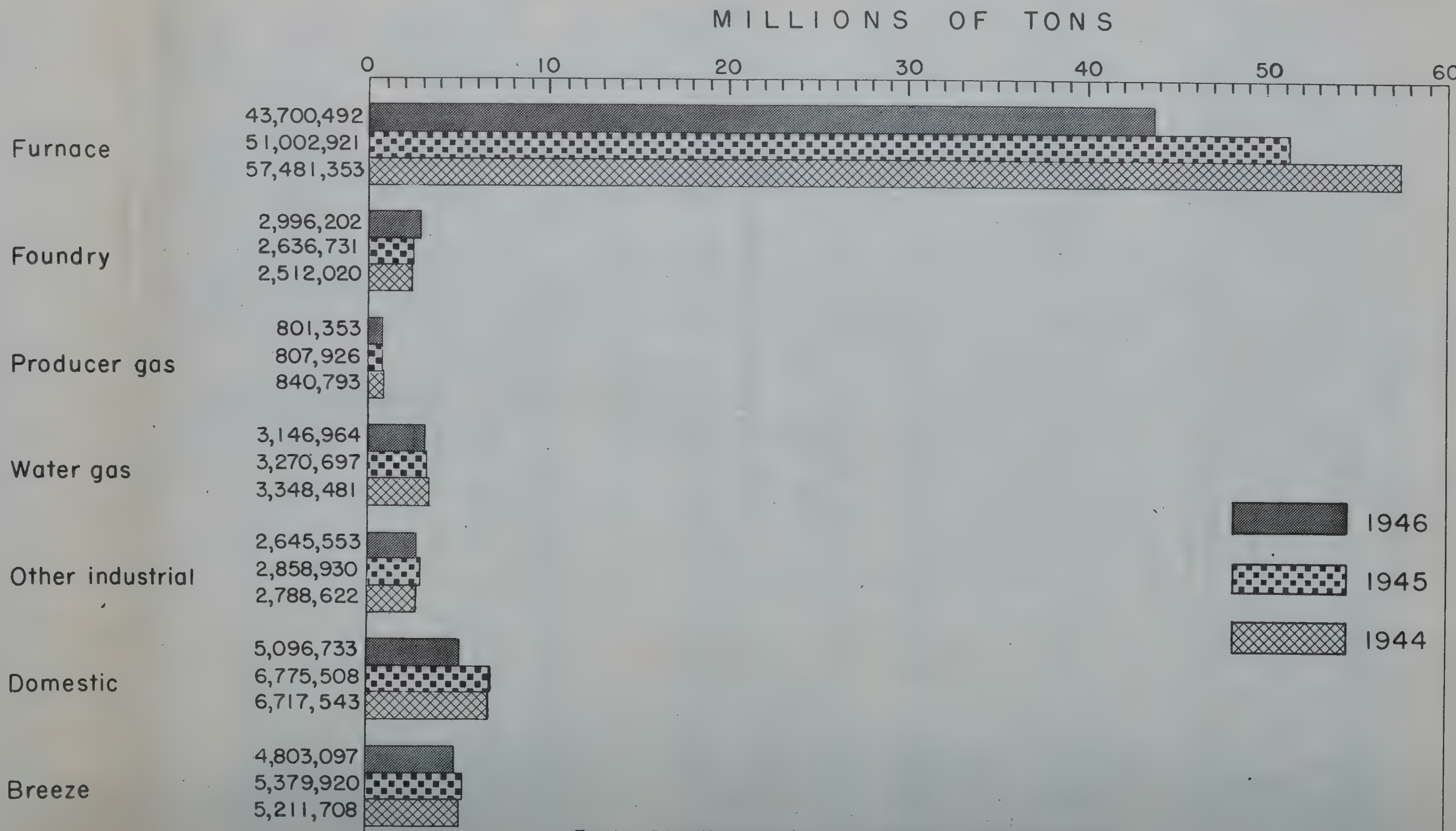

Fig. 1 – Distribution of oven and beehive coke, by uses.

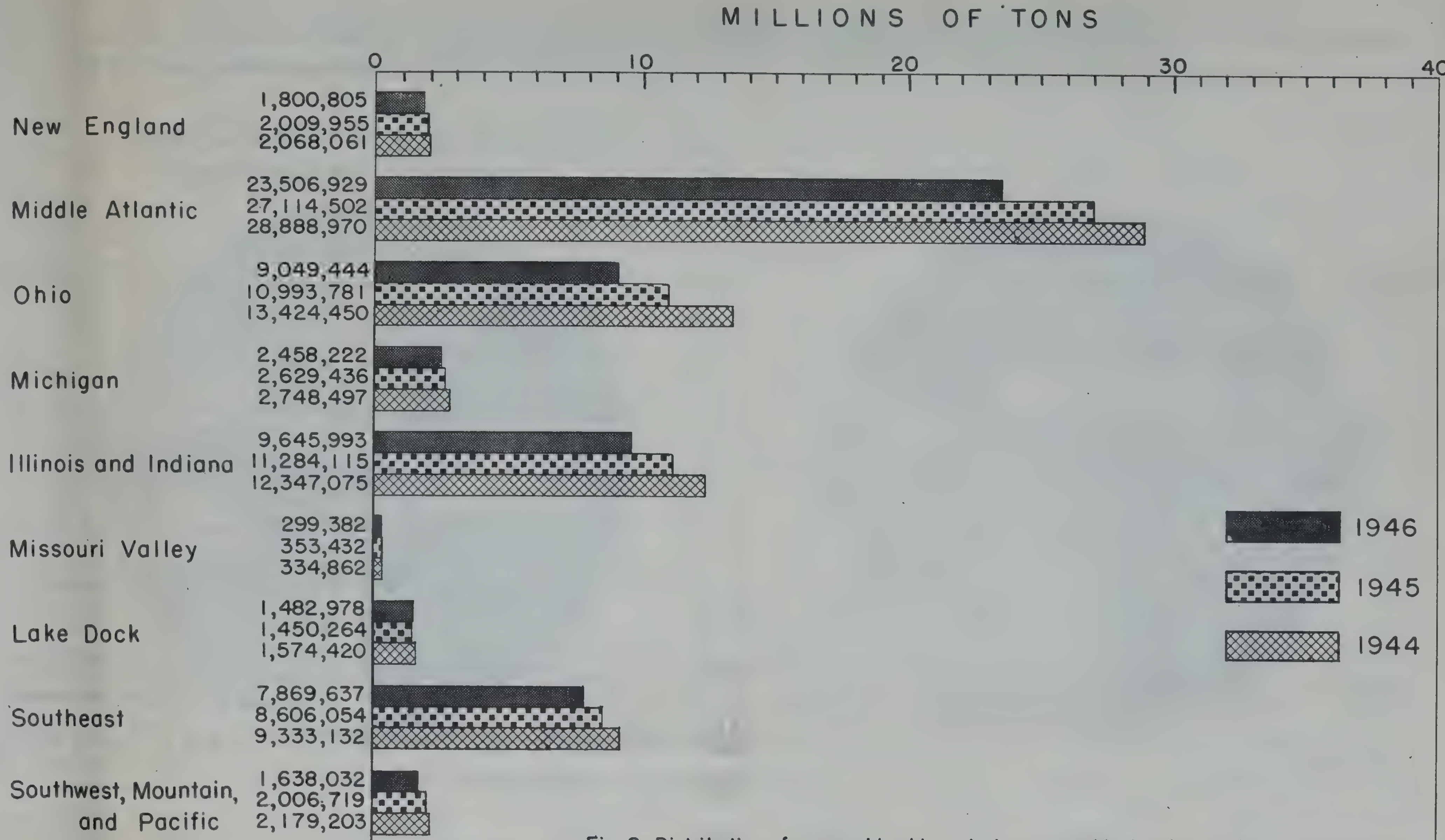

Fig. 2 - Distribution of oven and beehive coke by geographical regions in the United States.

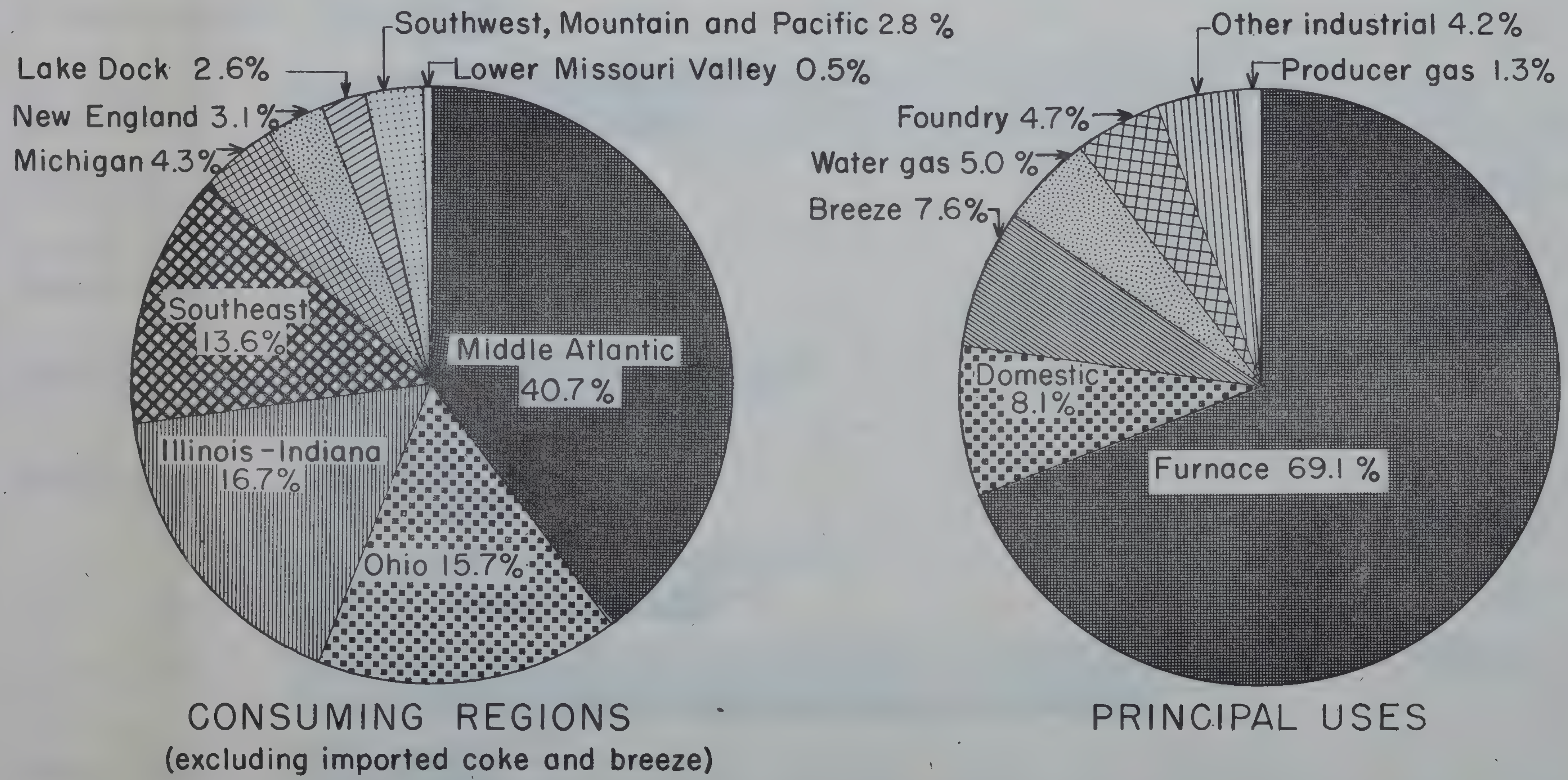

Fig.3 Distribution of oven and beehive coke in 1946.

TABLE 1. - SUMMARY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS
(Based upon reports from all United States producers showing destination of coke used by producer or sold in 1946.
Does not include imported coke which totaled 52,188 tons in 1946)

Consuming State	Coke							Coke breeze
	Furnace use	Foundry use	Making producer gas	Making water gas	Other industrial use	Domestic use	Total	
Alabama	3,822,221	147,829	....	920	123,019	75,298	4,169,287	213,706
Arizona	....	4,622	....	....	1,322	....	5,944	....
Arkansas	....	1,058	....	....	269	....	1,327	106
California	269,607	65,413	....	33	40,283	5,147	380,483	17,297
Colorado	528,110	13,419	....	....	34,559	377	576,465	70,352
Connecticut	....	43,597	75,566	112,467	7,357	148,229	387,216	49,274
Delaware	....	3,626	....	486	582	2,638	7,332	....
District of Columbia	....	46	....	59,457	588	66	60,157	833
Florida	....	2,539	....	44,608	2,433	2,996	52,576	....
Georgia	....	19,657	....	12,669	12,625	11,165	56,116	4,791
Idaho	....	424	....	....	2,739	69	3,232	105
Illinois	3,985,260	262,867	22,504	51,536	107,637	301,161	4,730,965	353,361
Indiana	4,323,462	156,869	25,656	31,921	179,026	198,094	4,915,028	475,849
Iowa	....	58,475	....	1,514	28,853	7,703	96,545	15,314
Kansas	....	16,554	....	....	1,672	....	18,226	6,637
Kentucky	592,401	26,194	....	15,945	9,649	34,333	678,522	40,611
Louisiana	....	7,737	....	....	42,049	2,099	51,885	28
Maine	....	8,425	....	11,049	2,006	41,563	63,043	....
Maryland	1,903,263	47,200	....	9,248	98,708	5,226	2,063,645	174,266
Massachusetts	10,329	62,692	122,507	140,427	36,252	698,386	1,070,593	126,357
Michigan	1,286,722	451,509	....	16,712	228,824	474,455	2,458,222	205,858
Minnesota	511,923	38,011	6,918	7,085	32,867	266,025	862,829	83,308
Mississippi	....	1,819	....	....	955	937	3,711	....
Missouri	....	73,294	....	2,014	42,086	53,330	170,724	10,981
Montana	....	1,036	....	....	31,772	....	32,808	13,013
Nebraska	....	3,879	....	8,474	1,067	467	13,887	114
Nevada	....	....	....	....	7,064	....	7,064	....
New Hampshire	....	5,016	....	637	267	68,642	74,562	....

(Continued on next page)

TABLE 1. - SUMMARY OF OVEN AND BEEHIVE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State	Coke							Coke breeze
	Furnace use	Foundry use	Making producer gas	Making water gas	Other industrial use	Domestic use	Total	
New Jersey	....	85,881	81,669	332,809	89,374	469,070	1,058,803	130,855
New Mexico	....	373	....	....	404	92	869	....
New York	2,711,611	155,534	291,546	993,834	345,365	987,242	5,485,132	450,456
North Carolina	....	15,728	....	4,403	5,607	4,995	30,733	662
North Dakota	....	238	....	82	300	1,273	1,893	....
Ohio	8,088,073	327,659	....	178,008	241,254	214,450	9,049,444	700,267
Oklahoma	....	3,604	....	....	114	....	3,718	16,344
Oregon	....	7,347	....	....	8,033	....	15,380	1,097
Pennsylvania	13,674,523	299,649	68,258	191,693	307,241	290,496	14,831,860	1,115,705
Rhode Island	....	14,087	33,300	17,045	972	105,134	170,538	24,022
South Carolina	....	4,567	....	2,298	1,875	7,567	16,307	7,474
South Dakota	....	207	....	....	237	1,401	1,845	....
Tennessee	118,822	88,015	....	59,848	35,940	5,315	307,940	106,369
Texas	....	29,606	....	1,330	44,495	....	75,431	1,519
Utah	411,281	11,292	....	....	46,352	4,637	473,562	98,782
Vermont	....	6,636	....	2,803	2,276	23,138	34,853	....
Virginia	72,146	42,823	....	324,425	68,838	1,101	509,333	3,410
Washington	....	8,190	....	....	417	....	8,607	3,365
West Virginia	1,353,612	76,202	....	445,775	166,320	3,203	2,045,112	168,660
Wisconsin	....	144,779	73,429	62,503	11,812	323,888	616,411	82,773
Wyoming	....	....	....	....	1,255	2	1,257	....
	43,663,366	2,846,224	801,353	3,144,058	2,455,011	4,841,410	57,751,422	4,773,921
Exports	37,126	149,978	....	2,906	190,542	255,323	635,875	29,176
	43,700,492	2,996,202	801,353	3,146,964	2,645,553	5,096,733	58,387,297	4,803,097

TABLE 2. - COMPARATIVE TONNAGE OF OVEN AND BEEHIVE COKE CONSUMED IN EACH STATE, BY REGIONS, 1940 AND 1946, IN NET TONS
(Exclusive of imported coke and of screenings or breeze)

Consuming region and State	Furnace use		Foundry use		Other industrial		Domestic use		Total	
	1940	1946	1940	1946	1940	1946	1940	1946	1940	1946
NEW ENGLAND:										
Maine	....	....	2,956	8,425	2,181	13,055	49,473	41,563	54,610	63,043
New Hampshire	....	....	1,443	5,016	1,616	904	55,709	68,642	58,768	74,562
Vermont	....	....	5,433	6,636	3,291	5,079	32,587	23,138	41,311	34,853
Massachusetts	88,830	10,329	48,872	62,692	162,598	299,186	933,356	698,386	1,233,656	1,070,593
Connecticut	....	....	34,847	43,597	128,140	195,390	203,534	148,229	366,521	387,216
Rhode Island	....	....	10,199	14,087	24,424	51,317	154,770	105,134	189,393	170,538
	88,830	10,329	103,750	140,453	322,250	564,931	1,429,429	1,085,092	1,944,259	1,800,805
MIDDLE ATLANTIC:										
New York	2,615,108	2,711,611	141,372	155,534	1,383,937	1,630,745	1,563,584	987,242	5,704,001	5,485,132
New Jersey	....	....	86,161	85,881	433,524	503,852	488,890	469,070	1,008,575	1,058,803
Pennsylvania	14,319,836	13,674,523	219,232	299,649	313,431	567,192	537,204	290,496	15,389,703	14,831,860
Delaware	....	....	2,758	3,626	1,962	1,068	2,326	2,638	7,046	7,332
Maryland	1,849,917	1,903,263	23,891	47,200	57,437	107,956	28,050	5,226	1,959,295	2,063,645
District of Columbia	....	....	395	46	64,505	60,045	2,430	66	67,330	60,157
	18,784,861	18,289,397	473,809	591,936	2,254,796	2,870,858	2,622,484	1,754,738	24,135,950	23,506,929
OHIO	8,619,762	8,088,073	304,373	327,659	192,476	419,262	460,339	214,450	9,576,950	9,049,444
MICHIGAN	1,076,370	1,286,722	333,791	451,509	253,488	245,536	1,135,694	474,455	2,799,343	2,458,222
ILLINOIS-INDIANA:										
Illinois	3,332,028	3,985,260	172,455	262,867	174,023	181,677	683,630	301,161	4,362,136	4,730,965
Indiana	4,305,518	4,323,462	106,063	156,869	137,587	236,603	380,826	198,094	4,929,994	4,915,028
	7,637,546	8,308,722	278,518	419,736	311,610	418,280	1,064,456	499,255	9,292,130	9,645,993
MISSOURI VALLEY:										
Missouri	....	....	34,426	73,294	63,769	44,100	269,036	53,330	367,231	170,724
Iowa	....	....	33,721	58,475	31,186	30,367	10,915	7,703	75,822	96,545
Nebraska	....	....	2,320	3,879	20,177	9,541	819	467	23,316	13,887
Kansas	....	....	7,510	16,554	2,787	1,672	50	....	10,347	18,226
	....	....	77,977	152,202	117,919	85,680	280,820	61,500	476,716	299,382

(Continued on next page)

TABLE 2. - COMPARATIVE TONNAGE OF OVEN AND BEEHIVE COKE CONSUMED IN EACH STATE, BY REGIONS, 1940 AND 1946, IN NET TONS (Continued)

Consuming region and State	Furnace use		Foundry use		Other industrial		Domestic use		Total	
	1940	1946	1940	1946	1940	1946	1940	1946	1940	1946
LAKE DOCK:										
Wisconsin	....	....	99,327	144,779	120,925	147,744	432,778	323,888	653,030	616,411
Minnesota	225,569	511,923	15,684	38,011	42,003	46,870	331,682	266,025	614,938	862,829
North Dakota	....	....	....	238	267	382	1,491	1,273	1,758	1,893
South Dakota	....	....	181	207	501	237	1,767	1,401	2,449	1,845
	225,569	511,923	115,192	183,235	163,696	195,233	767,718	592.587	1,272,175	1,482,978
SOUTHEAST:										
Virginia	52,715	72,146	31,258	42,823	374,841	393,263	8,957	1,101	467,771	509,333
West Virginia	787,694	1,353,612	12,657	76,202	474,713	612,095	4,369	3,203	1,279,433	2,045,112
North Carolina	....	....	13,410	15,728	6,353	10,010	4,169	4,995	23,932	30,733
South Carolina	....	....	3,613	4,567	2,736	4,173	3,160	7,567	9,509	16,307
Georgia	....	....	13,765	19,657	10,957	25,294	15,478	11,165	40,200	56,116
Florida	....	....	1,017	2,539	30,290	47,041	4,961	2,996	36,268	52,576
Kentucky	221,698	592,401	20,341	26,194	12,532	25,594	41,993	34,333	296,564	678,522
Tennessee	54,312	118,822	59,724	88,015	44,455	95,788	18,658	5,315	177,149	307,940
Alabama	4,099,434	3,822,221	123,394	147,829	42,982	123,939	99,102	75,298	4,364,912	4,169,287
Mississippi	....	....	821	1,819	....	955	1,385	937	2,206	3,711
	5,215,853	5,959,202	280,000	425,373	999,859	1,338,152	202,232	146,910	6,697,944	7,869,637
SOUTHWEST, MOUNTAIN, AND PACIFIC:										
Louisiana	....	....	2,883	7,737	21,656	42,049	7,374	2,099	31,913	51,885
Arkansas	....	....	1,444	1,058	567	269	38	....	2,049	1,327
Oklahoma	....	....	2,205	3,604	172	114	19	....	2,396	3,718
Texas	....	....	15,991	29,606	31,409	45,825	225	....	47,625	75,431
New Mexico	....	....	1,018	373	219	404	....	92	1,237	869
Arizona	....	....	4,053	4,622	140	1,322	155	....	4,348	5,944
Colorado	521,698	528,110	11,604	13,419	12,391	34,559	201	377	545,894	576,465
Utah	163,790	411,281	10,337	11,292	55,234	46,352	2,113	4,637	231,474	473,562
Nevada	....	....	28	....	29	7,064	....	....	57	7,064
Wyoming	....	....	....	....	2,470	1,255	2	2	2,472	1,257
Montana	....	....	2,060	1,036	22,733	31,772	....	....	24,793	32,808
Idaho	....	....	69	424	3,831	2,739	....	69	3,900	3,232
Washington	....	....	3,089	8,190	1,609	417	21	....	4,719	8,607
Oregon	....	....	2,821	7,347	1,788	8,033	....	....	4,609	15,380
California	....	269,607	36,426	65,413	30,266	40,316	988	5,147	67,680	380,483
	685,488	1,208,998	94,028	154,121	184,514	262,490	11,136	12,423	975,166	1,638,032

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
NEW ENGLAND REGION												
MAINE:												
From New England	....	....	8,425	.....	11,049	.....	40,080	.....	59,554	....	59,554	....
Pennsylvania ...	....	....	.....	.....	....	1,977	74	1,297	74	3,274	3,348	....
West Virginia ..	....	....	.....	.....	29	.....	112	.....	141	....	141	....
	....	....	8,425	.....	11,078	1,977	40,266	1,297	59,769	3,274	63,043	....
NEW HAMPSHIRE:												
From New England	....	....	5,016	.....	564	.....	55,352	.....	60,932	....	60,932	....
N. J. and N. Y.	....	....	.....	.....	308	.....	5,135	.....	5,443	....	5,443	....
Ohio	....	....	.....	.....	32	.....	.....	.....	32	....	32	....
Pennsylvania ...	....	....	.....	.....	....	.....	66	8,021	66	8,021	8,087	....
West Virginia ..	....	....	.....	.....	....	.....	68	.....	68	....	68	....
	....	....	5,016	.....	904	.....	60,621	8,021	66,541	8,021	74,562	....
VERMONT:												
From New England	....	....	6,613	.....	117	.....	5,122	.....	11,852	....	11,852	....
N. J. and N. Y.	....	....	.....	.....	4,822	.....	13,959	.....	18,781	....	18,781	....
Pennsylvania ...	....	....	.....	23	....	140	329	3,548	329	3,711	4,040	....
West Virginia ..	....	....	.....	.....	....	.....	180	.....	180	....	180	....
	....	....	6,613	23	4,939	140	19,590	3,548	31,142	3,711	34,853	....
MASSACHUSETTS:												
From New England	8,389	....	62,656	.....	286,660	.....	653,830	.....	1,011,535	....	1,011,535	126,357
N. J. and N. Y.	....	....	.....	.....	12,385	.....	5,951	.....	18,336	....	18,336	....
Pennsylvania ...	....	1,940	.....	36	89	52	14,341	21,841	14,430	23,869	38,299	....
West Virginia ..	....	....	.....	.....	....	.....	1,939	484	1,939	484	2,423	....
	8,389	1,940	62,656	36	299,134	52	676,061	22,325	1,046,240	24,353	1,070,593	126,357
RHODE ISLAND:												
From New England	....	....	14,087	.....	51,317	.....	104,794	.....	170,198	....	170,198	24,022
Pennsylvania ...	....	....	.....	.....	....	.....	103	237	103	237	340	....
	....	....	14,087	.....	51,317	.....	104,897	237	170,301	237	170,538	24,022
CONNECTICUT:												
From New England	....	....	39,683	.....	194,994	.....	145,921	.....	380,598	....	380,598	49,274
N. J. and N. Y.	....	....	.....	.....	322	.....	1,128	.....	1,450	....	1,450	....
Pennsylvania ...	....	....	3,719	195	....	74	40	996	3,759	1,265	5,024	....
West Virginia ..	....	....	.....	.....	....	.....	144	.....	144	....	144	....
	....	....	43,402	195	195,316	74	147,233	996	385,951	1,265	387,216	49,274

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TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
MIDDLE ATLANTIC REGION												
NEW YORK:												
From Alabama	....	....	195	.....	....	.....	.....	.....	195	....	195	....
Illinois	....	....	63	.....	....	.....	.....	.....	63	....	63	....
Ind. and Ky. ...	....	....	.....	.....	....	.....	.....	.....	....	....	....	107
Mich. and Wis. .	7,302	....	36,790	.....	10,515	.....	.....	.....	54,607	....	54,607	7,911
New England	....	....	13,299	.....	248	.....	33	.....	13,580	....	13,580	....
N. J. and N. Y.	2,497,033	....	19,492	.....	1,579,725	.....	885,212	.....	4,981,462	....	4,981,462	420,047
Ohio	....	....	20,762	.....	1,253	.....	.....	.....	22,015	....	22,015	20,070
Pennsylvania ...	....	144,565	36,061	28,667	5,735	21,030	61,656	35,046	103,452	229,308	332,760	1,573
Virginia	....	....	.....	22	....	.....	.....	.....	....	22	22	....
West Virginia ..	62,711	....	.....	183	12,132	107	3,258	2,037	78,101	2,327	80,428	748
	2,567,046	144,565	126,662	28,872	1,609,608	21,137	950,159	37,083	5,253,475	231,657	5,485,132	450,456
NEW JERSEY:												
From Illinois	....	....	68	.....	....	.....	.....	.....	68	....	68	....
Maryland	....	....	.....	.....	....	.....	.....	.....	....	....	....	16,924
Mich. and Wis. .	....	....	.....	.....	....	.....	.....	.....	....	....	....	199
New England	....	....	24	.....	....	.....	.....	.....	24	....	24	....
N. J. and N. Y.	....	....	40,193	.....	471,508	.....	413,447	.....	925,148	....	925,148	107,120
Pennsylvania ...	....	....	37,209	6,085	21,623	3,586	51,538	3,782	110,370	13,453	123,823	6,612
West Virginia ..	....	....	1,787	515	3,038	4,097	218	85	5,043	4,697	9,740	....
	....	....	79,281	6,600	496,169	7,683	465,203	3,867	1,040,653	18,150	1,058,803	130,855
PENNSYLVANIA:												
From Illinois	....	....	7,768	.....	....	.....	.....	.....	7,768	....	7,768	....
Mich. and Wis. .	....	....	863	.....	....	.....	.....	.....	863	....	863	138
Minnesota	....	....	33	.....	....	.....	.....	.....	33	....	33	....
New England	....	....	32	.....	....	.....	.....	.....	32	....	32	....
N. J. and N. Y.	....	....	561	.....	72	.....	421	.....	1,054	....	1,054	....
Ohio	209,357	....	13,456	.....	763	.....	952	.....	224,528	....	224,528	104
Pennsylvania ...	11,213,806	2,066,706	107,826	90,187	384,641	157,472	261,624	12,340	11,967,897	2,326,705	14,294,602	1,095,496
West Virginia ..	170,080	14,574	75,051	3,872	14,832	9,412	14,811	348	274,774	28,206	302,980	19,967
	11,593,243	2,081,280	205,590	94,059	400,308	166,884	277,808	12,688	12,476,949	2,354,911	14,831,860	1,115,705
DELAWARE:												
From N. J. and N. Y.	....	....	.....	.....	....	.....	51	.....	51	....	51	....
Pennsylvania ...	....	....	3,374	252	831	237	2,587	.....	6,792	489	7,281	....
	....	....	3,374	252	831	237	2,638	.....	6,843	489	7,332	....
MARYLAND:												
From Alabama	....	....	144	.....	....	.....	.....	.....	144	....	144	....
Maryland	1,642,866	....	122	.....	103	.....	.....	.....	1,643,091	....	1,643,091	172,850
Pennsylvania ...	38,638	215,039	21,846	21,165	898	60,169	403	4,823	61,785	301,196	362,981	1,416
Virginia	....	....	.....	1,117	....	721	.....	.....	....	1,838	1,838	....
West Virginia ..	....	6,720	623	2,183	9,065	37,000	.....	.....	9,688	45,903	55,591	....
	1,681,504	221,759	22,735	24,465	10,066	97,890	403	4,823	1,714,708	348,937	2,063,645	174,266
DISTRICT OF COLUMBIA:												
From Ohio	....	....	.....	.....	588	.....	.....	.....	588	....	588	632
Pennsylvania ...	....	....	46	.....	....	59,457	66	.....	112	59,457	59,569	201
	....	....	46	.....	588	59,457	66	.....	700	59,457	60,157	833

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TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
OHIO REGION												
OHIO:												
From Alabama	....	....	18,565	.....	3,690	.....	.....	.....	22,255	....	22,255	....
Illinois	....	....	10,999	.....	....	.....	.....	.....	10,999	....	10,999	6,078
Ind. and Ky.	117	....	27,166	.....	2,222	.....	22,738	.....	52,243	....	52,243	9,319
Mich. and Wis. ...	37,105	....	87,600	.....	10,487	.....	.....	.....	135,192	....	135,192	218
N. J. and N. Y. ..	2,401	....	5,425	.....	12,312	.....	121	.....	20,259	....	20,259	....
Ohio	6,851,243	....	139,711	.....	343,552	.....	169,273	.....	7,503,779	....	7,503,779	675,339
Pennsylvania	379,578	638,721	7,971	26,713	32,396	14,233	6,691	14,448	426,636	694,115	1,120,751	9,060
Virginia	....	....	.....	1,448	....	38	.....	.....	....	1,486	1,486	....
West Virginia	176,373	2,535	166	1,895	....	332	1,142	37	177,681	4,799	182,480	253
	7,446,817	641,256	297,603	30,056	404,659	14,603	199,965	14,485	8,349,044	700,400	9,049,444	700,267
MICHIGAN REGION												
MICHIGAN:												
From Alabama	....	....	30,235	.....	....	.....	808	.....	31,043	....	31,043	....
Illinois	....	....	48,685	.....	2,097	.....	4,828	.....	55,610	....	55,610	3,303
Ind. and Ky.	....	....	58,342	.....	3,252	.....	16,004	.....	77,598	....	77,598	300
Mich. and Wis. ...	1,278,402	....	257,934	.....	175,334	.....	381,421	.....	2,093,091	....	2,093,091	195,538
Minnesota	....	....	.....	.....	79	.....	107	.....	186	....	186	....
N. J. and N. Y. ..	....	....	.....	.....	43,043	.....	12,147	.....	55,190	....	55,190	....
Ohio	....	....	29,993	.....	7,125	.....	26,340	.....	63,458	....	63,458	6,680
Pennsylvania	....	8,320	.....	23,223	349	5,943	19,761	4,411	20,110	41,897	62,007	37
Virginia	....	....	.....	751	....	.....	.....	.....	....	751	751	....
West Virginia	....	....	.....	2,346	5,233	3,081	2,265	6,363	7,498	11,790	19,288	....
	1,278,402	8,320	425,189	26,320	236,512	9,024	463,681	10,774	2,403,784	54,438	2,458,222	205,858

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TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
ILLINOIS-INDIANA REGION												
ILLINOIS:												
From Alabama	....	....	1,058	.....	286	.....	14,819	.....	16,163	....	16,163	....
Illinois	2,475,380	....	129,585	.....	149,567	.....	207,883	.....	2,962,415	....	2,962,415	265,996
Ind. and Ky.	1,492,487	....	81,561	.....	18,166	.....	47,353	.....	1,639,567	....	1,639,567	80,441
Mich. and Wis.	....	....	26,994	.....	1,185	.....	18,251	.....	46,430	....	46,430	512
Minnesota	....	....	.....	.....	500	.....	.....	.....	500	....	500	....
Missouri	11,115	....	23,065	.....	9,877	.....	7,129	.....	51,186	....	51,186	6,412
Ohio	4,692	....	191	.....	1,712	.....	.....	.....	6,595	....	6,595	....
Pennsylvania	....	1,586	.....	343	....	40	2,202	.....	2,202	1,969	4,171	....
Virginia	....	....	.....	33	....	.....	.....	.....	....	33	33	....
West Virginia	....	....	.....	37	200	144	120	3,404	320	3,585	3,905	....
	3,983,674	1,586	262,454	413	181,493	184	297,757	3,404	4,725,378	5,587	4,730,965	353,361
INDIANA:												
From Alabama	....	....	4,878	.....	701	.....	1,801	.....	7,380	....	7,380	....
Illinois	5,665	....	26,343	.....	4,951	.....	609	.....	37,568	....	37,568	20,189
Ind. and Ky.	4,317,649	....	93,890	.....	207,738	.....	168,361	.....	4,787,638	....	4,787,638	454,525
Mich. and Wis.	....	....	13,761	.....	13,008	.....	.....	.....	26,769	....	26,769	....
Missouri	....	....	185	.....	....	.....	337	.....	522	....	522	....
Ohio	....	....	15,326	.....	8,997	.....	24,353	.....	48,676	....	48,676	1,135
Pennsylvania	....	148	.....	1,379	644	280	2,136	.....	2,780	1,807	4,587	....
Tennessee	....	....	785	.....	....	.....	.....	.....	785	....	785	....
Virginia	....	....	.....	171	....	109	.....	374	....	654	654	....
West Virginia	....	....	.....	151	....	175	38	85	38	411	449	....
	4,323,314	148	155,168	1,701	236,039	564	197,635	459	4,912,156	2,872	4,915,028	475,849

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TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
MISSOURI VALLEY REGION												
MISSOURI:												
From Alabama	....	....	4,224	.....	....	.....	313	.....	4,537	....	4,537	....
Illinois	....	....	5,233	.....	....	.....	.....	.....	5,233	....	5,233	35
Ind. and Ky.	....	....	6,367	.....	....	.....	200	.....	6,567	....	6,567	2,793
Mich. and Wis.	....	....	3,906	.....	....	.....	.....	.....	3,906	....	3,906	....
Missouri	....	....	53,305	.....	44,032	.....	52,817	.....	150,154	....	150,154	8,153
Pennsylvania	....	....	.....	147	....	68	.....	.....	....	215	215	....
Virginia	....	....	.....	31	....	.....	.....	.....	....	31	31	....
West Virginia	....	....	.....	81	....	.....	.....	.....	....	81	81	....
	....	....	73,035	259	44,032	68	53,330	.....	170,397	327	170,724	10,981
IOWA:												
From Alabama	....	....	.....	.....	37	.....	1,064	.....	1,101	....	1,101	....
Colorado	....	....	.....	.....	....	35	.....	.....	....	35	35	....
Illinois	....	....	14,177	.....	1,704	.....	665	.....	16,546	....	16,546	4,094
Ind. and Ky.	....	....	30,505	.....	2,302	.....	4,368	.....	37,175	....	37,175	11,218
Mich. and Wis.	....	....	11,291	.....	1,341	.....	1,155	.....	13,787	....	13,787	2
Minnesota	....	....	.....	.....	930	.....	126	.....	1,056	....	1,056	....
Missouri	....	....	2,230	.....	1,655	.....	281	.....	4,166	....	4,166	....
Ohio	....	....	272	.....	22,363	.....	.....	.....	22,635	....	22,635	....
Pennsylvania	....	....	.....	.....	....	.....	44	.....	44	....	44	....
	....	....	58,475	.....	30,332	35	7,703	.....	96,510	35	96,545	15,314
NEBRASKA:												
From Alabama	....	....	.....	.....	207	.....	216	.....	423	....	423	....
Colorado	....	....	.....	.....	....	60	36	.....	36	60	96	....
Illinois	....	....	1,513	.....	....	.....	.....	.....	1,513	....	1,513	....
Ind. and Ky.	....	....	1,000	.....	....	.....	.....	.....	1,000	....	1,000	....
Mich. and Wis.	....	....	1,196	.....	35	.....	215	.....	1,446	....	1,446	....
Minnesota	....	....	.....	.....	541	.....	.....	.....	541	....	541	....
Missouri	....	....	170	.....	8,698	.....	.....	.....	8,868	....	8,868	....
Pennsylvania	....	....	.....	.....	....	.....	.....	.....	....	....	....	114
	....	....	3,879	.....	9,481	60	467	.....	13,827	60	13,887	114
KANSAS:												
From Alabama	....	....	1,381	.....	34	.....	.....	.....	1,415	....	1,415	....
Colorado	....	....	42	88	603	201	.....	.....	645	289	934	....
Illinois	....	....	3,780	.....	129	.....	.....	.....	3,909	....	3,909	1,034
Ind. and Ky.	....	....	384	.....	30	.....	.....	.....	414	....	414	4,053
Mich. and Wis.	....	....	2,335	.....	....	.....	.....	.....	2,335	....	2,335	....
Missouri	....	....	8,418	.....	647	.....	.....	.....	9,065	....	9,065	1,550
Pennsylvania	....	....	.....	22	....	28	.....	.....	....	50	50	....
Tennessee	....	....	104	.....	....	.....	.....	.....	104	....	104	....
	....	....	16,444	110	1,443	229	.....	.....	17,887	339	18,226	6,637

(Continued on next page)

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
LAKE DOCK REGION												
WISCONSIN:												
From Alabama	....	....	601	.....	....	.....	1,264	.....	1,865	....	1,865	....
Illinois	....	....	32,301	.....	1,362	.....	25,511	.....	59,174	....	59,174	10,681
Ind. and Ky.	....	....	36,727	.....	5,131	.....	8,259	.....	50,117	....	50,117	19,567
Mich. and Wis. ...	....	....	73,624	.....	139,753	.....	281,454	.....	494,831	....	494,831	52,525
Minnesota	....	....	.....	.....	865	.....	5,678	.....	6,543	....	6,543	....
Missouri	....	....	1,081	.....	....	.....	1,168	.....	2,249	....	2,249	....
Pennsylvania	....	....	.....	321	....	633	.....	.....	....	954	954	....
Virginia	....	....	.....	124	....	.....	.....	.....	....	124	124	....
West Virginia	....	....	.....	.....	....	.....	.....	554	....	554	554	....
	....	....	144,334	445	147,111	633	323,334	554	614,779	1,632	616,411	82,773
MINNESOTA:												
From Illinois	....	....	12,754	.....	....	.....	.....	.....	12,754	....	12,754	....
Ind. and Ky.	....	....	7,283	.....	....	.....	.....	.....	7,283	....	7,283	....
Mich. and Wis. ...	1,188	....	7,769	.....	....	.....	3,251	.....	12,208	....	12,208	....
Minnesota	510,735	....	10,174	.....	46,870	.....	262,774	.....	830,553	....	830,553	83,308
Virginia	....	....	.....	31	....	.....	.....	.....	....	31	31	....
	511,923	....	37,980	31	46,870	.....	266,025	.....	862,798	31	862,829	83,308
NORTH DAKOTA:												
From Minnesota	....	....	27	.....	382	.....	1,273	.....	1,682	....	1,682	....
Missouri	....	....	211	.....	....	.....	.....	.....	211	....	211	....
	....	....	238	.....	382	.....	1,273	.....	1,893	....	1,893	....
SOUTH DAKOTA:												
From Ind. and Ky.	....	....	27	.....	....	.....	.....	.....	27	....	27	....
Mich. and Wis. ...	....	....	180	.....	237	.....	73	.....	490	....	490	....
Minnesota	....	....	.....	.....	....	.....	1,328	.....	1,328	....	1,328	....
	....	....	207	.....	237	.....	1,401	.....	1,845	....	1,845	....

(Continued on next page)

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHEAST REGION												
WEST VIRGINIA:												
From Alabama	....	....	.....	.....	43,102	.....	.....	.....	43,102	....	43,102	....
Ind. and Ky.	....	....	.....	.....	17,787	.....	5	.....	17,792	....	17,792	....
Mich. and Wis. ...	....	....	.....	.....	9,180	.....	.....	.....	9,180	....	9,180	....
N. J. and N. Y. ..	....	....	.....	.....	312	.....	.....	.....	312	....	312	529
Ohio	70,295	....	4,832	.....	17,850	.....	25	.....	93,002	....	93,002	15,796
Pennsylvania	....	65,282	.....	54,112	250	24,727	.....	.....	250	144,121	144,371	9,505
Tennessee	....	....	.....	.....	3,545	.....	.....	.....	3,545	....	3,545	....
Virginia	....	125	.....	2,244	....	17,941	.....	.....	....	20,310	20,310	....
West Virginia	1,217,798	112	1,377	13,637	390,222	87,179	3,173	.....	1,612,570	100,928	1,713,498	142,830
	1,288,093	65,519	6,209	69,993	482,248	129,847	3,203	.....	1,779,753	265,359	2,045,112	168,660
VIRGINIA:												
From Alabama	....	....	12,367	.....	2,490	.....	.....	.....	14,857	....	14,857	1,230
Ind. and Ky.	....	25,000	220	.....	11,839	.....	818	.....	12,877	25,000	37,877	....
Ohio	1,021	....	9,130	.....	303,395	.....	65	.....	313,611	....	313,611	1,970
Pennsylvania	3,478	....	1,098	1,488	2,675	29	.....	.....	7,251	1,517	8,768	....
Tennessee	....	....	569	.....	....	.....	.....	.....	569	....	569	86
Virginia	....	42,647	.....	11,686	....	72,399	.....	218	....	126,950	126,950	124
West Virginia	....	....	.....	6,265	28	408	.....	.....	28	6,673	6,701	....
	4,499	67,647	23,384	19,439	320,427	72,836	883	218	349,193	160,140	509,333	3,410
NORTH CAROLINA:												
From Alabama	....	....	9,746	.....	7,469	.....	4,630	.....	21,845	....	21,845	....
Ohio	....	....	.....	.....	....	.....	.....	.....	....	....	....	35
Pennsylvania	....	....	.....	.....	....	.....	.....	.....	....	....	....	56
Tennessee	....	....	3,364	.....	....	.....	.....	.....	3,364	....	3,364	571
Virginia	....	....	.....	2,562	....	2,541	.....	365	....	5,468	5,468	....
West Virginia	....	....	.....	56	....	.....	.....	.....	....	56	56	....
	....	....	13,110	2,618	7,469	2,541	4,630	365	25,209	5,524	30,733	662
SOUTH CAROLINA:												
From Alabama	....	....	4,120	.....	4,040	.....	7,179	.....	15,339	....	15,339	2,394
Ind. and Ky.	....	....	.....	.....	....	.....	.....	.....	....	....	....	212
Maryland	....	....	.....	.....	....	.....	.....	.....	....	....	....	803
Ohio	....	....	.....	.....	....	.....	.....	.....	....	....	....	769
Tennessee	....	....	.....	.....	....	.....	.....	.....	....	....	....	3,296
Virginia	....	....	.....	447	....	133	.....	388	....	968	968	....
	....	....	4,120	447	4,040	133	7,179	388	15,339	968	16,307	7,474

(Continued on next page)

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHEAST REGION (Cont'd)												
GEORGIA:												
From Alabama	....	....	17,310	.....	25,267	.....	11,165	.....	53,742	....	53,742	....
Ind. and Ky.	....	....	.....	.....	....	.....	.....	.....	....	....	....	201
Tennessee	....	....	2,187	.....	....	.....	.....	.....	2,187	....	2,187	4,590
Virginia	....	....	.....	160	....	27	.....	.....	....	187	187	....
	....	....	19,497	160	25,267	27	11,165	.....	55,929	187	56,116	4,791
FLORIDA:												
From Alabama	....	....	2,539	.....	47,041	.....	2,996	.....	52,576	....	52,576	....
KENTUCKY:												
From Alabama	....	....	4,939	.....	6,282	.....	677	.....	11,898	....	11,898	....
Ind. and Ky.	550,006	42,186	202	.....	5,483	.....	1,355	.....	557,046	42,186	599,232	35,085
Mich. and Wis.	....	....	768	.....	....	.....	.....	.....	768	....	768	....
Ohio	....	....	13,880	.....	11,585	.....	32,270	.....	57,735	....	57,735	5,141
Pennsylvania	....	....	.....	5,124	....	2,094	.....	.....	....	7,218	7,218	385
Tennessee	....	....	325	.....	....	.....	.....	.....	325	....	325	....
Virginia	....	209	.....	102	....	68	.....	31	....	410	410	....
West Virginia	....	....	.....	854	....	82	.....	.....	....	936	936	....
	550,006	42,395	20,114	6,080	23,350	2,244	34,302	31	627,772	50,750	678,522	40,611
TENNESSEE:												
From Alabama	....	....	56,585	.....	23,006	.....	4,103	.....	83,694	....	83,694	72,313
Illinois	....	....	.....	.....	....	.....	.....	.....	....	....	....	2,310
Ind. and Ky.	....	....	.....	.....	....	.....	.....	.....	....	....	....	21,030
Missouri	....	....	.....	.....	639	.....	.....	.....	639	....	639	....
Pennsylvania	....	....	.....	.....	....	.....	248	.....	248	....	248	....
Tennessee	117,271	....	27,640	.....	69,339	.....	.....	.....	214,250	....	214,250	10,647
Virginia	....	1,551	.....	3,524	....	2,804	.....	964	....	8,843	8,843	69
West Virginia	....	....	.....	266	....	.....	.....	.....	....	266	266	....
	117,271	1,551	84,225	3,790	92,984	2,804	4,351	964	298,831	9,109	307,940	106,369
ALABAMA:												
From Alabama	3,822,221	....	145,573	.....	123,939	.....	75,298	.....	4,167,031	....	4,167,031	195,458
Ind. and Ky.	....	....	.....	.....	....	.....	.....	.....	....	....	....	13,873
Ohio	....	....	.....	.....	....	.....	.....	.....	....	....	....	4,375
Tennessee	....	....	2,084	.....	....	.....	.....	.....	2,084	....	2,084	....
Virginia	....	....	.....	172	....	.....	.....	.....	....	172	172	....
	3,822,221	....	147,657	172	123,939	.....	75,298	.....	4,169,115	172	4,169,287	213,706
MISSISSIPPI:												
From Alabama	....	....	1,782	.....	955	.....	937	.....	3,674	....	3,674	....
Tennessee	....	....	37	.....	....	.....	.....	.....	37	....	37	....
	....	....	1,819	.....	955	.....	937	.....	3,711	....	3,711	....

(Continued on next page)

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION												
LOUISIANA:												
From Alabama	....	....	7,656	.....	32,244	.....	2,099	.....	41,999	....	41,999	....
Missouri	....	....	.....	.....	....	.....	.....	.....	....	....	....	28
Ohio	....	....	.....	.....	7,033	.....	.....	.....	7,033	....	7,033	....
Tennessee	....	....	.....	.....	2,772	.....	.....	.....	2,772	....	2,772	....
Virginia	....	....	.....	81	....	.....	.....	.....	....	81	81	....
	....	....	7,656	81	42,049	.....	2,099	.....	51,804	81	51,885	28
ARKANSAS:												
From Alabama	....	....	617	.....	34	.....	.....	.....	651	....	651	....
Missouri	....	....	.....	.....	235	.....	.....	.....	235	....	235	106
Tennessee	....	....	340	.....	....	.....	.....	.....	340	....	340	....
Virginia	....	....	.....	101	....	.....	.....	.....	....	101	101	....
	....	....	957	101	269	.....	.....	.....	1,226	101	1,327	106
OKLAHOMA:												
From Alabama	....	....	765	.....	114	.....	.....	.....	879	....	879	....
Illinois	....	....	158	.....	....	.....	.....	.....	158	....	158	187
Ind. and Ky.	....	....	521	.....	....	.....	.....	.....	521	....	521	15,701
Mich. and Wis.	....	....	326	.....	....	.....	.....	.....	326	....	326	....
Missouri	....	....	1,528	.....	....	.....	.....	.....	1,528	....	1,528	456
Tennessee	....	....	194	.....	....	.....	.....	.....	194	....	194	....
Virginia	....	....	.....	112	....	.....	.....	.....	....	112	112	....
	....	....	3,492	112	114	.....	.....	.....	3,606	112	3,718	16,344
TEXAS:												
From Alabama	....	....	28,038	.....	30,731	.....	.....	.....	58,769	....	58,769	....
Colorado	....	....	35	35	344	14,597	.....	.....	379	14,632	15,011	549
Ind. and Ky.	....	....	.....	.....	81	.....	.....	.....	81	....	81	....
Mich. and Wis.	....	....	825	.....	....	.....	.....	.....	825	....	825	....
Missouri	....	....	673	.....	....	.....	.....	.....	673	....	673	897
Tennessee	....	....	.....	.....	72	.....	.....	.....	72	....	72	73
	....	....	29,571	35	31,228	14,597	.....	.....	60,799	14,632	75,431	1,519
NEW MEXICO:												
From Alabama	....	....	95	.....	....	.....	.....	.....	95	....	95	....
Colorado	....	....	129	77	274	130	92	.....	495	207	702	....
Tennessee	....	....	72	.....	....	.....	.....	.....	72	....	72	....
	....	....	296	77	274	130	92	.....	662	207	869	....

(Continued on next page)

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION (Cont'd)												
ARIZONA:												
From Alabama	....	....	4,070	.....	....	.....	.....	.....	4,070	....	4,070	....
Colorado	....	....	29	.....	937	385	.....	.....	966	385	1,351	....
Missouri	....	....	523	.....	....	.....	.....	.....	523	....	523	....
	....	....	4,622	.....	937	385	.....	.....	5,559	385	5,944	....
COLORADO:												
From Colorado	528,110	....	4,078	146	23,205	8,860	377	.....	555,770	9,006	564,776	70,352
Illinois	....	....	4,149	.....	....	.....	.....	.....	4,149	....	4,149	....
Mich. and Wis.	....	....	2,138	.....	1,416	.....	.....	.....	3,554	....	3,554	....
Minnesota	....	....	.....	.....	137	.....	.....	.....	137	....	137	....
Missouri	....	....	2,908	.....	760	.....	.....	.....	3,668	....	3,668	....
Utah	....	....	.....	.....	....	181	.....	.....	....	181	181	....
	528,110	....	13,273	146	25,518	9,041	377	.....	567,278	9,187	576,465	70,352
NEVADA:												
From Utah	....	....	.....	.....	7,064	.....	.....	.....	7,064	....	7,064	....
UTAH:												
From Alabama	....	....	406	.....	....	.....	.....	.....	406	....	406	....
Colorado	....	....	.....	.....	632	275	.....	.....	632	275	907	....
Illinois	....	....	2,768	.....	....	.....	.....	.....	2,768	....	2,768	....
Mich. and Wis.	....	....	768	.....	1,887	.....	.....	.....	2,655	....	2,655	....
Minnesota	....	....	.....	.....	31	.....	.....	.....	31	....	31	....
Missouri	....	....	6,974	.....	....	.....	.....	.....	6,974	....	6,974	....
Ohio	121	....	.....	.....	....	.....	.....	.....	121	....	121	....
Utah	409,196	1,964	4	372	43,249	278	4,637	.....	457,086	2,614	459,700	98,782
	409,317	1,964	10,920	372	45,799	553	4,637	.....	470,673	2,889	473,562	98,782
WYOMING:												
From Colorado	....	....	.....	.....	1	.....	2	.....	3	....	3	....
Mich. and Wis.	....	....	.....	.....	1,254	.....	.....	.....	1,254	....	1,254	....
	....	....	.....	.....	1,255	.....	2	.....	1,257	....	1,257	....
MONTANA:												
From Colorado	....	....	.....	.....	140	18,558	.....	.....	140	18,558	18,698	....
Ind. and Ky.	....	....	841	.....	80	.....	.....	.....	921	....	921	....
Mich. and Wis.	....	....	32	.....	1,971	.....	.....	.....	2,003	....	2,003	....
Minnesota	....	....	163	.....	752	.....	.....	.....	915	....	915	....
Utah	....	....	.....	.....	10,185	86	.....	.....	10,185	86	10,271	13,013
	....	....	1,036	.....	13,128	18,644	.....	.....	14,164	18,644	32,808	13,013

(Continued on next page)

TABLE 3. - SOURCE AND QUANTITY OF OVEN AND BEEHIVE COKE AND BREEZE CONSUMED IN EACH STATE IN 1946, IN NET TONS (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION (Cont'd)												
IDAHO:												
From Alabama	....	....	162	.....	....	.....	.....	.....	162	....	162	....
Colorado	....	....	.....	.....	150	.....	.....	.....	150	....	150	....
Ind. and Ky.	....	....	107	.....	....	.....	.....	.....	107	....	107	....
Mich. and Wis. ...	....	....	.....	.....	1,515	.....	.....	.....	1,515	....	1,515	....
Minnesota	....	....	.....	.....	563	.....	.....	.....	563	....	563	....
Missouri	....	....	96	.....	....	.....	.....	.....	96	....	96	....
Utah	....	....	.....	59	205	306	69	.....	274	365	639	105
	....	....	365	59	2,433	306	69	.....	2,867	365	3,232	105
OREGON:												
From Alabama	....	....	2,518	.....	....	.....	.....	.....	2,518	....	2,518	....
Colorado	....	....	.....	.....	228	.....	.....	.....	228	....	228	....
Illinois	....	....	1,524	.....	....	.....	.....	.....	1,524	....	1,524	....
Ind. and Ky.	....	....	1,590	.....	....	.....	.....	.....	1,590	....	1,590	....
Mich. and Wis. ...	....	....	116	.....	....	.....	.....	.....	116	....	116	....
Minnesota	....	....	502	.....	168	.....	.....	.....	670	....	670	....
Missouri	....	....	1,097	.....	1,254	.....	.....	.....	2,351	....	2,351	....
Utah	....	....	.....	.....	6,383	.....	.....	.....	6,383	....	6,383	1,097
	....	....	7,347	.....	8,033	.....	.....	.....	15,380	....	15,380	1,097
WASHINGTON:												
From Illinois	....	....	2,285	.....	....	.....	.....	.....	2,285	....	2,285	....
Ind. and Ky.	....	....	1,268	.....	....	.....	.....	.....	1,268	....	1,268	....
Mich. and Wis. ...	....	....	848	.....	....	.....	.....	.....	848	....	848	....
Minnesota	....	....	238	.....	417	.....	.....	.....	655	....	655	....
Missouri	....	....	3,551	.....	....	.....	.....	.....	3,551	....	3,551	....
Utah	....	....	.....	.....	....	.....	.....	.....	....	....	....	3,365
	....	....	8,190	.....	417	.....	.....	.....	8,607	....	8,607	3,365
CALIFORNIA:												
From Alabama	....	....	13,381	.....	10,513	.....	.....	.....	23,894	....	23,894	....
California	268,171	....	.....	.....	2,100	.....	5,147	.....	275,418	....	275,418	17,016
Colorado	....	....	.....	.....	104	12,764	.....	.....	104	12,764	12,868	....
Illinois	....	....	9,939	.....	147	.....	.....	.....	10,086	....	10,086	....
Ind. and Ky.	....	....	11,121	.....	....	.....	.....	.....	11,121	....	11,121	....
Mich. and Wis. ...	....	....	6,851	.....	7,606	.....	.....	.....	14,457	....	14,457	....
Minnesota	....	....	1,401	.....	3,604	.....	.....	.....	5,005	....	5,005	....
Missouri	....	....	22,427	.....	786	.....	.....	.....	23,213	....	23,213	....
Tennessee	....	....	163	.....	....	.....	.....	.....	163	....	163	....
Utah	....	1,436	.....	.....	2,446	246	.....	.....	2,446	1,682	4,128	281
West Virginia	....	....	.....	130	....	.....	.....	.....	....	130	130	....
	268,171	1,436	65,283	130	27,306	13,010	5,147	.....	365,907	14,576	380,483	17,297

TABLE 4. - DISTRIBUTION OF COKE SHIPPED OR USED BY PRODUCER IN 1946, IN NET TONS

PRODUCED IN ALABAMA

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Alabama	3,822,221	145,573	123,939	75,298	4,167,031	195,458
Arizona	....	4,070	....	....	4,070	....
Arkansas	....	617	34	....	651	....
California	....	13,381	10,513	....	23,894	....
Florida	....	2,539	47,041	2,996	52,576	....
Georgia	....	17,310	25,267	11,165	53,742	....
Idaho	....	162	....	....	162	....
Illinois	....	1,058	286	14,819	16,163	....
Indiana	....	4,878	701	1,801	7,380	....
Iowa	....	....	37	1,064	1,101	....
Kansas	....	1,381	34	....	1,415	....
Kentucky	....	4,939	6,282	677	11,898	....
Louisiana	....	7,656	32,244	2,099	41,999	....
Maryland	....	144	....	....	144	....
Michigan	....	30,235	....	808	31,043	....
Mississippi	....	1,782	955	937	3,674	....
Missouri	....	4,224	....	313	4,537	....
Nebraska	....	....	207	216	423	....
New Mexico	....	95	....	....	95	....
New York	....	195	....	....	195	....
North Carolina	....	9,746	7,469	4,630	21,845	....
Ohio	....	18,565	3,690	....	22,255	....
Oklahoma	....	765	114	....	879	....
Oregon	....	2,518	....	....	2,518	....
South Carolina	....	4,120	4,040	7,179	15,339	2,394
Tennessee	....	56,585	23,006	4,103	83,694	72,313
Texas	....	28,038	30,731	....	58,769	....
Utah	....	406	....	....	406	....
Virginia	....	12,367	2,490	....	14,857	1,230
West Virginia	....	....	43,102	....	43,102	....
Wisconsin	....	601	....	1,264	1,865	....
Export	....	11,109	15,216	....	26,325	....
	3,822,221	385,059	377,398	129,369	4,714,047	271,395

PRODUCED IN CALIFORNIA

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
California	268,171	....	2,100	5,147	275,418	17,016
Export	....	....	....	....	....	4,124
	268,171	....	2,100	5,147	275,418	21,140

PRODUCED IN COLORADO

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
Arizona	....	29	1,322	....	1,351	....
California	....	....	12,868	....	12,868	....
Colorado	528,110	4,224	32,065	377	564,776	70,352
Idaho	....	....	150	....	150	....
Iowa	....	....	35	....	35	....
Kansas	....	130	804	....	934	....
Montana	....	....	18,698	....	18,698	....
Nebraska	....	....	60	36	96	....
New Mexico	....	206	404	92	702	....
Oregon	....	....	228	....	228	....
Texas	....	70	14,941	....	15,011	549
Utah	....	....	907	....	907	....
Wyoming	....	....	1	2	3	....
Export	....	....	32	....	32	....
	528,110	4,659	82,515	507	615,791	70,901

(Continued on next page)

TABLE 4. - DISTRIBUTION OF COKE SHIPPED OR USED BY PRODUCER IN 1946, IN NET TONS (Continued)

PRODUCED IN CONNECTICUT, MASSACHUSETTS, AND RHODE ISLAND

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Connecticut	....	39,683	194,994	145,921	380,598	49,274
Maine	....	8,425	11,049	40,080	59,554	....
Massachusetts	8,389	62,656	286,660	653,830	1,011,535	126,357
New Hampshire	....	5,016	564	55,352	60,932	....
New Jersey	....	24	....	....	24	....
New York	....	13,299	248	33	13,580	....
Pennsylvania	....	32	....	....	32	....
Rhode Island	....	14,087	51,317	104,794	170,198	24,022
Vermont	....	6,613	117	5,122	11,852	....
Export	....	126	....	5,735	5,861	....
	8,389	149,961	544,949	1,010,867	1,714,166	199,653

PRODUCED IN ILLINOIS

California	....	9,939	147	....	10,086	....
Colorado	....	4,149	....	....	4,149	....
Illinois	2,475,380	129,585	149,567	207,883	2,962,415	265,996
Indiana	5,665	26,343	4,951	609	37,568	20,189
Iowa	....	14,177	1,704	665	16,546	4,094
Kansas	....	3,780	129	....	3,909	1,034
Michigan	....	48,685	2,097	4,828	55,610	3,303
Minnesota	....	12,754	....	....	12,754	....
Missouri	....	5,233	....	....	5,233	35
Nebraska	....	1,513	....	....	1,513	....
New Jersey	....	68	....	....	68	....
New York	....	63	....	....	63	....
Ohio	....	10,999	....	....	10,999	6,078
Oklahoma	....	158	....	....	158	187
Oregon	....	1,524	....	....	1,524	....
Pennsylvania	....	7,768	....	....	7,768	....
Tennessee	....	....	....	....	....	2,310
Utah	....	2,768	....	....	2,768	....
Washington	....	2,285	....	....	2,285	....
Wisconsin	....	32,301	1,362	25,511	59,174	10,681
Export	....	631	....	....	631	....
	2,481,045	314,723	159,957	239,496	3,195,221	313,907

PRODUCED IN INDIANA AND KENTUCKY

Alabama	....	....	....	....	....	13,873
California	....	11,121	....	....	11,121	....
Georgia	....	....	....	....	....	201
Idaho	....	107	....	....	107	....
Illinois	1,492,487	81,561	18,166	47,353	1,639,567	80,441
Indiana	4,317,649	93,890	207,738	168,361	4,787,638	454,525
Iowa	....	30,505	2,302	4,368	37,175	11,218
Kansas	....	384	30	....	414	4,053
Kentucky	592,192	202	5,483	1,355	599,232	35,085
Michigan	....	58,342	3,252	16,004	77,598	300
Minnesota	....	7,283	....	....	7,283	....
Missouri	....	6,367	....	200	6,567	2,793
Montana	....	841	80	....	921	....
Nebraska	....	1,000	....	....	1,000	....
New York	....	....	....	....	....	107
Ohio	117	27,166	2,222	22,738	52,243	9,319
Oklahoma	....	521	....	....	521	15,701
Oregon	....	1,590	....	....	1,590	....
South Carolina	....	....	....	....	....	212
South Dakota	....	27	....	....	27	....
Tennessee	....	....	....	....	....	21,030
Texas	....	....	81	....	81	....
Virginia	25,000	220	11,839	818	37,877	....
Washington	....	1,268	....	....	1,268	....
West Virginia	....	....	17,787	5	17,792	....
Wisconsin	....	36,727	5,131	8,259	50,117	19,567
Export	197	4,890	18,214	948	24,249	....
	6,427,642	364,012	292,325	270,409	7,354,388	668,425

(Continued on next page)

TABLE 4. - DISTRIBUTION OF COKE SHIPPED OR USED BY PRODUCER IN 1946, IN NET TONS (Continued)

PRODUCED IN MARYLAND

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Maryland	1,642,866	122	103	....	1,643,091	172,850
New Jersey	....	....	....	....	....	16,924
South Carolina	....	....	....	....	....	803
	1,642,866	122	103	....	1,643,091	190,577
PRODUCED IN MICHIGAN AND WISCONSIN						
California	....	6,851	7,606	....	14,457	....
Colorado	....	2,138	1,416	....	3,554	....
Idaho	....	....	1,515	....	1,515	....
Illinois	....	26,994	1,185	18,251	46,430	512
Indiana	....	13,761	13,008	....	26,769	....
Iowa	....	11,291	1,341	1,155	13,787	2
Kansas	....	2,335	....	....	2,335	....
Kentucky	....	768	....	....	768	....
Michigan	1,278,402	257,934	175,334	381,421	2,093,091	195,538
Minnesota	1,188	7,769	....	3,251	12,208	....
Missouri	....	3,906	....	....	3,906	....
Montana	....	32	1,971	....	2,003	....
Nebraska	....	1,196	35	215	1,446	....
New Jersey	....	....	....	....	....	199
New York	7,302	36,790	10,515	....	54,607	7,911
Ohio	37,105	87,600	10,487	....	135,192	218
Oklahoma	....	326	....	....	326	....
Oregon	....	116	....	....	116	....
Pennsylvania	....	863	....	....	863	138
South Dakota	....	180	237	73	490	....
Texas	....	825	....	....	825	....
Utah	....	768	1,887	....	2,655	....
Washington	....	848	....	....	848	....
West Virginia	....	....	9,180	....	9,180	....
Wisconsin	....	73,624	139,753	281,454	494,831	52,525
Wyoming	....	....	1,254	....	1,254	....
Export	18,131	72,754	17,883	50,656	159,424	7,843
	1,342,128	609,669	394,607	736,476	3,082,880	264,886
PRODUCED IN MINNESOTA						
California	....	1,401	3,604	....	5,005	....
Colorado	....	....	137	....	137	....
Idaho	....	....	563	....	563	....
Illinois	....	....	500	....	500	....
Iowa	....	....	930	126	1,056	....
Michigan	....	....	79	107	186	....
Minnesota	510,735	10,174	46,870	262,774	830,553	83,308
Montana	....	163	752	....	915	....
Nebraska	....	....	541	....	541	....
North Dakota	....	27	382	1,273	1,682	....
Oregon	....	502	168	....	670	....
Pennsylvania	....	33	....	....	33	....
South Dakota	....	....	....	1,328	1,328	....
Utah	....	....	31	....	31	....
Washington	....	238	417	....	655	....
Wisconsin	....	....	865	5,678	6,543	....
Export	....	....	379	10,075	10,454	739
	510,735	12,538	56,218	281,361	860,852	84,047

(Continued on next page)

TABLE 4. - DISTRIBUTION OF COKE SHIPPED OR USED BY PRODUCER IN 1946, IN NET TONS (Continued)

PRODUCED IN MISSOURI

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Arizona	....	523	....	....	523	....
Arkansas	....	....	235	....	235	106
California	....	22,427	786	....	23,213	....
Colorado	....	2,908	760	....	3,668	....
Idaho	....	96	....	....	96	....
Illinois	11,115	23,065	9,877	7,129	51,186	6,412
Indiana	....	185	....	337	522	....
Iowa	....	2,230	1,655	281	4,166	....
Kansas	....	8,418	647	....	9,065	1,550
Louisiana	....	....	....	....	....	28
Missouri	....	53,305	44,032	52,817	150,154	8,153
Nebraska	....	170	8,698	....	8,868	....
North Dakota	....	211	....	....	211	....
Oklahoma	....	1,528	....	....	1,528	456
Oregon	....	1,097	1,254	....	2,351	....
Tennessee	....	....	639	....	639	....
Texas	....	673	....	....	673	897
Utah	....	6,974	....	....	6,974	....
Washington	....	3,551	....	....	3,551	....
Wisconsin	....	1,081	....	1,168	2,249	....
Export	....	76	....	....	76	....
	11,115	128,518	68,583	61,732	269,948	17,602

PRODUCED IN NEW JERSEY AND NEW YORK

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
Connecticut	....	....	322	1,128	1,450	....
Delaware	....	....	....	51	51	....
Massachusetts	....	....	12,385	5,951	18,336	....
Michigan	....	....	43,043	12,147	55,190	....
New Hampshire	....	....	308	5,135	5,443	....
New Jersey	....	40,193	471,508	413,447	925,148	107,120
New York	2,497,033	19,492	1,579,725	885,212	4,981,462	420,047
Ohio	2,401	5,425	12,312	121	20,259	....
Pennsylvania	....	561	72	421	1,054	....
Vermont	....	....	4,822	13,959	18,781	....
West Virginia	....	....	312	....	312	529
Export	5,728	13,477	63,652	131,463	214,320	2,509
	2,505,162	79,148	2,188,461	1,469,035	6,241,806	530,205

PRODUCED IN OHIO

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
Alabama	....	....	....	....	....	4,375
District of Columbia	....	....	588	....	588	632
Illinois	4,692	191	1,712	....	6,595	....
Indiana	....	15,326	8,997	24,353	48,676	1,135
Iowa	....	272	22,363	....	22,635	....
Kentucky	....	13,880	11,585	32,270	57,735	5,141
Louisiana	....	....	7,033	....	7,033	....
Michigan	....	29,993	7,125	26,340	63,458	6,680
New Hampshire	....	....	32	....	32	....
New York	....	20,762	1,253	....	22,015	20,070
North Carolina	....	....	....	....	....	35
Ohio	6,851,243	139,711	343,552	169,273	7,503,779	675,339
Pennsylvania	209,357	13,456	763	952	224,528	104
South Carolina	....	....	....	....	....	769
Utah	121	....	....	....	121	....
Virginia	1,021	9,130	303,395	65	313,611	1,970
West Virginia	70,295	4,832	17,850	25	93,002	15,796
Export	....	10,061	2,427	5,351	17,839	12,940
	7,136,729	257,614	728,675	258,629	8,381,647	744,986

(Continued on next page)

TABLE 4. - DISTRIBUTION OF COKE SHIPPED OR USED BY PRODUCER IN 1946, IN NET TONS (Continued)

PRODUCED IN PENNSYLVANIA

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Connecticut	....	3,914	74	1,036	5,024	....
Delaware	....	3,626	1,068	2,587	7,281	....
District of Columbia	....	46	59,457	66	59,569	201
Illinois	1,586	343	40	2,202	4,171	....
Indiana	148	1,379	924	2,136	4,587	....
Iowa	....	....	....	44	44	....
Kansas	....	22	28	....	50	....
Kentucky	....	5,124	2,094	....	7,218	385
Maine	....	....	1,977	1,371	3,348	....
Maryland	253,677	43,011	61,067	5,226	362,981	1,416
Massachusetts	1,940	36	141	36,182	38,299	....
Michigan	8,320	23,223	6,292	24,172	62,007	37
Missouri	....	147	68	....	215	....
Nebraska	....	....	....	....	....	114
New Hampshire	....	....	....	8,087	8,087	....
New Jersey	....	43,294	25,209	55,320	123,823	6,612
New York	144,565	64,728	26,765	96,702	332,760	1,573
North Carolina	....	....	....	....	....	56
Ohio	1,018,299	34,684	46,629	21,139	1,120,751	9,060
Pennsylvania	13,280,512	198,013	542,113	273,964	14,294,602	1,095,496
Rhode Island	....	....	....	340	340	....
Tennessee	....	....	....	248	248	....
Vermont	....	23	140	3,877	4,040	....
Virginia	3,478	2,586	2,704	....	8,768	....
West Virginia	65,282	54,112	24,977	....	144,371	9,505
Wisconsin	....	321	633	....	954	....
Export	13,070	33,447	74,212	42,072	162,801	1,021
	14,790,877	512,079	876,612	576,771	16,756,339	1,125,476
PRODUCED IN TENNESSEE						
Alabama	....	2,084	....	....	2,084	....
Arkansas	....	340	....	....	340	....
California	....	163	....	....	163	....
Georgia	....	2,187	....	....	2,187	4,590
Indiana	....	785	....	....	785	....
Kansas	....	104	....	....	104	....
Kentucky	....	325	....	....	325	....
Louisiana	....	....	2,772	....	2,772	....
Mississippi	....	37	....	....	37	....
New Mexico	....	72	....	....	72	....
North Carolina	....	3,364	....	....	3,364	571
Oklahoma	....	194	....	....	194	....
South Carolina	....	....	....	....	....	3,296
Tennessee	117,271	27,640	69,339	....	214,250	10,647
Texas	....	....	72	....	72	73
Virginia	....	569	....	....	569	86
West Virginia	....	....	3,545	....	3,545	....
	117,271	37,864	75,728	....	230,863	19,263
PRODUCED IN UTAH						
California	1,436	....	2,692	....	4,128	281
Colorado	....	....	181	....	181	....
Idaho	....	59	511	69	639	105
Montana	....	....	10,271	....	10,271	13,013
Nevada	....	....	7,064	....	7,064	....
Oregon	....	....	6,383	....	6,383	1,097
Utah	411,160	376	43,527	4,637	459,700	98,782
Washington	....	....	....	....	....	3,365
	412,596	435	70,629	4,706	488,366	116,643

(Continued on next page)

TABLE 4. - DISTRIBUTION OF COKE SHIPPED OR USED BY PRODUCER IN 1946, IN NET TONS (Continued)

PRODUCED IN VIRGINIA

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Alabama	....	172	....	....	172	....
Arkansas	....	101	....	....	101	....
Georgia	....	160	27	....	187	....
Illinois	....	33	....	....	33	....
Indiana	....	171	109	374	654	....
Kentucky	209	102	68	31	410	....
Louisiana	....	81	....	....	81	....
Maryland	....	1,117	721	....	1,838	....
Michigan	....	751	....	....	751	....
Minnesota	....	31	....	....	31	....
Missouri	....	31	....	....	31	....
New York	....	22	....	....	22	....
North Carolina	....	2,562	2,541	365	5,468	....
Ohio	....	1,448	38	....	1,486	....
Oklahoma	....	112	....	....	112	....
South Carolina	....	447	133	388	968	....
Tennessee	1,551	3,524	2,804	964	8,843	69
Virginia	42,647	11,686	72,399	218	126,950	124
West Virginia	125	2,244	17,941	....	20,310	....
Wisconsin	....	124	....	....	124	....
Export	....	1,459	1,433	....	2,892	....
	44,532	26,378	98,214	2,340	171,464	193

PRODUCED IN WEST VIRGINIA

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
California	....	130	....	....	130	....
Connecticut	....	....	....	144	144	....
Illinois	....	37	344	3,524	3,905	....
Indiana	....	151	175	123	449	....
Kentucky	....	854	82	....	936	....
Maine	....	....	29	112	141	....
Maryland	6,720	2,806	46,065	....	55,591	....
Massachusetts	....	....	....	2,423	2,423	....
Michigan	....	2,346	8,314	8,628	19,288	....
Missouri	....	81	....	....	81	....
New Hampshire	....	....	....	68	68	....
New Jersey	....	2,302	7,135	303	9,740	....
New York	62,711	183	12,239	5,295	80,428	748
North Carolina	....	56	....	....	56	....
Ohio	178,908	2,061	332	1,179	182,480	253
Pennsylvania	184,654	78,923	24,244	15,159	302,980	19,967
Tennessee	....	266	....	....	266	....
Vermont	....	....	....	180	180	....
Virginia	....	6,265	436	....	6,701	....
West Virginia	1,217,910	15,014	477,401	3,173	1,713,498	142,830
Wisconsin	....	....	....	554	554	....
Export	....	1,948	....	9,023	10,971	....
	1,650,903	113,423	576,796	49,888	2,391,010	163,798

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

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FOR RELEASE AUGUST 28, 1947.

MINERAL MARKET REPORT
M.M.S. NO. 1542

IRON BLAST-FURNACE SLAG IN 1946

The production of iron blast-furnace slag in 1946 reached a new high of 16,706,792 short tons valued at $14,869,839, a figure 32 percent above the 12,635,868 tons valued at $10,450,852 in 1945. These statistics are based on a canvass conducted by the National Slag Association, of the 36 companies operating some 50 plants that prepare iron blast-furnace slag for commercial use. The results of this canvass were assembled in cooperation with the Bureau of Mines, United States Department of the Interior.

Screened air-cooled slag, the major product, increased 25 percent over the 1945 figure. The largest increases percentagewise, however, occurred in sales of slag utilized for: lightweight aggregate, which reached 773,150 tons, an increase of 230 percent; concrete block, 373,257 tons, 182 percent above the 1945 figure; mineral wool 629,782 tons, an increase of 57 percent. These commodities are used in the construction industry and present further evidence of the expansion of the highway and housing programs. Details of the tonnage and value of slag consumed in the various uses are shown in an accompanying table.

Although screened air-cooled iron blast-furnace slag is produced in 12 States most of the production comes from the steel centers in Ohio, Alabama, Pennsylvania, and Illinois. Ohio, as in the previous year, was the largest single producer. As shown in the accompanying table, shipments of slag are made by truck, railroad, and waterway.

Railroads transport the bulk of the tonnage; trucks account for a substantial quantity; and waterways only minor amounts. It is believed that the decrease of 6 percent in the quantity moved by railroads in 1946 was due largely to freight car shortages.

Slag processors in 1946 reported the recovery of 180,432 short tons of iron from slag, an increase of 14 percent over the 158,186 tons recovered in 1945. In view of the critical shortage of pig iron in 1946, this recovery of iron represented an important contribution toward meeting the demands by the iron and steel industry for this product.

A total of 4,571,175 man-hours were expended by 2,023 plant and yard employees of the industry in the production of commercial slag in 1946. This excludes those assigned to administrative and sales activities.

Prepared by G. Richards Gwinn, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division; Economics and Statistics Branch.

Screened air-cooled iron blast-furnace slag sold or used by producers in the United States, 1945-46, by States 1/

	1945			1946		
	Quantity		Value	Quantity		Value
	Short tons	Percent of total		Short tons	Percent of total	
Alabama-------------------	3,417,471	28.9	$2,570,830	3,462,614	24.1	$2,887,268
Ohio----------------------	3,857,046	32.6	2,951,418	3,849,789	26.9	3,928,964
Pennsylvania--------------	1,396,733	11.8	1,454,479	2,188,061	15.3	2,320,032
Other States 2/-----------	3,163,214	26.7	3,005,613	4,832,432	33.7	4,114,429
	11,834,464	100.0	9,982,340	14,332,896	100.0	13,250,693

1/ National Slag Association.
2/ Illinois, New York, Maryland, Michigan, West Virginia, Kentucky, Colorado, Texas, and California.

Shipments of iron blast-furnace slag in the United States, 1942-46, by methods of transportation 1/

(Percent of total)

Method of transportation	1942	1943	1944	1945	1946
Rail------------------------------	52	56	56	67	61
Truck-----------------------------	47	44	44	33	38
Waterway--------------------------	1	(2)	(2)	(2)	1

1/ National Slag Association.
2/ Less than 0.5 percent.

Iron blast-furnace slag sold or used by producers in the United States in 1946, by uses 1/

Use	Air-cooled						Granulated			Lightweight 2/		
	Screened			Unscreened								
		Value - $			Value - $			Value - $			Value - $	
	Short tons	Total	Av. per ton	Short tons	Total	Av. per ton	Short tons	Total	Av. per ton	Short tons	Total	Av. per ton
Aggregate for portland cement concrete-------	1,462,078	1,326,302	.91	---------	-------	---	---------	--------	---	773,150	1,321,685	1.71
Mineral aggregate for bituminous plant mix--	1,466,662	1,569,987	1.07	---------	-------	---	---------	--------	---	-------	---------	---
Road construction in types other than above	6,073,552	5,998,604	.99	286,810	139,600	.49	240,464	48,588	.20	-------	---------	---
Airport construction 3/-	325,265	349,488	1.07	---------	-------	---	---------	--------	---	-------	---------	---
Railroad ballast-------	3,426,351	2,404,998	.70	38,808	14,931	.38	---------	--------	---	-------	---------	---
Mineral wool-----------	629,782	681,518	1.08	---------	-------	---	---------	--------	---	-------	---------	---
Roofing slag-----------	205,831	283,375	1.38	---------	-------	---	---------	--------	---	-------	---------	---
Sewage trickling filter media----------	8,460	9,489	1.12	---------	-------	---	---------	--------	---	-------	---------	---
Agricultural slag------	46,979	52,529	1.12	---------	-------	---	22,943	16,843	.73	-------	---------	---
Cement manufacture-----	--------	---------	----	---------	-------	---	686,027	(4)	---	-------	---------	---
Concrete block---------	373,257	317,928	.85	---------	-------	---	---------	--------	---	-------	---------	---
Other uses-------------	314,679	259,475	.82	271,339	56,547	.21	58,355	20,952	.36	-------	---------	---
Total: 1946-------	14,332,396	13,250,693	.92	596,957	211,078	.35	1,007,789	5/86,383	---	773,150	1,321,685	1.71
1945-------	11,427,689	9,841,813	.86	406,775	140,527	.35	567,297	132,581	.23	234,107	335,931	1.43
1944-------	10,730,613	9,260,257	.86	776,302	303,460	.39	733,255	133,308	.18	165,822	232,508	1.40
1943-------	13,736,642	11,714,225	.85	1,364,779	540,465	.40	1,329,215	319,421	.24	76,971	112,817	1.47
1942-------	13,591,896	11,832,670	.87	2,073,611	884,178	.43	3,457,211	587,094	.17	-------	---------	---
1941-------	12,372,218	10,434,167	.84	797,363	350,082	.44	1,508,695	239,835	.16	-------	---------	---
1940-------	8,132,396	7,015,616	.86	1,230,832	507,288	.41	989,814	257,737	.26	-------	---------	---
1939-------	7,108,061	5,870,582	.83	812,220	361,554	.45	1,188,094	122,017	.10	-------	---------	---
1938-------	6,118,505	5,600,668	.92	1,202,754	567,224	.47	656,807	78,723	.12	-------	---------	---

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1/ National Slag Association. 2/ For use in the manufacture of lightweight concrete products. 3/ Excludes concrete and bituminous plant mix. 4/ Data not available. 5/ Excludes value of slag used for cement manufacture.

Grinding and polishing sand (including blast sand). Sales of this sand increased 41 percent reaching 906,889 tons averaging $1.52 per ton. States leading in production were Pennsylvania, Michigan, Illinois, Missouri, and New Jersey.

Fire or furnace sand. Decreasing approximately 20 percent in tonnage, sales were 248,866 tons averaging $1.34 per ton. The largest output by States was from Indiana, Ohio, New Jersey, Pennsylvania, and Illinois.

Engine sand. Sales of engine sand increased 1 percent and reached 2,797,132 tons averaging 69 cents per ton. West Virginia, Pennsylvania, Illinois, Indiana, and Kentucky led in production.

Filter sand. Production of filter sand increased 43 percent to 157,511 tons with an average value of $1.41 per ton. States leading in production were New Jersey, New York, Connecticut, Massachusetts, and Iowa.

Preparation. Washed, screened, or otherwise prepared sand and gravel comprised 91 percent (174,195,542 tons) of the total commercial production; average value was 80 cents a ton compared to 50 cents for unprepared material.

Transportation. Of the total commercial output, 51 percent was shipped by truck, 40 percent by railroad, and 9 percent by waterway. When Government-and-contractor output, which is commonly moved by truck, is added the percentages become respectively 64, 29, and 7.

GOVERNMENT-AND-CONTRACTOR OPERATIONS

Output of sand and gravel from noncommercial or Government-and-contractor operations in 1946 accounted for 24 percent of the total tonnage compared with 22 percent in 1945. The value of this tonnage in 1946 as in 1945 represents 14 percent of the total for the industry. The increase in quantity is attributed largely to the expansion of the Government program to improve existing roads and build new highways. States reported 50 percent of the total in 1946, counties 42, municipalities 2, and other agencies 6. As in the previous year only 19 percent of the total was classified as prepared with an average value of 70 cents per ton. Unprepared material was valued at 30 cents per ton. Construction and maintenance crews of States, counties, municipalities and other Government agencies produced 37,614,000 tons averaging 32 cents per ton, and contractors furnished 24,425,000 tons at 46 cents a ton.

Sand and gravel sold or used by producers in the United States, 1945-46, by commercial and Government-and-contractor operations and by uses

	1945			1946		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
COMMERCIAL OPERATIONS						
Sand:						
Glass----------------	4,681,920	$8,374,218	$1.79	4,848,602	$9,541,405	$1.97
Molding--------------	7,190,856	9,724,750	1.35	6,973,906	9,531,263	1.37
Building-------------	30,490,146	18,812,208	.62	48,237,949	31,653,529	.66
Paving---------------	16,681,521	10,428,371	.63	24,360,044	16,373,892	.67
Grinding and polishing[1]--------	642,511	1,029,501	1.60	906,889	1,379,954	1.52
Fire or furnace------	308,997	387,872	1.26	248,866	333,643	1.34
Engine---------------	2,771,896	1,924,725	.69	2,797,132	1,924,779	.69
Filter---------------	109,845	231,026	2.10	157,511	284,991	1.81
Railroad ballast[2]--	1,082,626	400,762	.37	714,884	262,089	.37
Other[3]-------------	1,116,353	1,117,153	1.00	1,548,620	1,747,921	1.13
Total commercial sand----------------	65,076,671	52,430,586	.81	90,794,403	73,033,466	.80
Gravel:						
Building-------------	27,910,042	21,735,554	.78	40,424,515	32,958,822	.82
Paving---------------	36,759,164	25,693,994	.70	46,894,010	34,325,134	.73
Railroad ballast[4]	20,657,982	9,518,328	.46	12,009,960	6,341,133	.53
Other[5]-------------	1,734,439	1,043,910	.60	1,969,678	1,438,147	.73
Total commercial gravel--------------	87,061,627	57,991,786	.67	101,298,163	75,063,236	.74
Total commercial sand and gravel---	152,138,298	110,422,372	.73	192,092,566	148,096,702	.77
GOVERNMENT-AND-CONTRACTOR OPERATIONS[6]						
Sand:						
Building-------------	1,018,000	428,000	.42	894,000	313,000	.35
Paving---------------	5,631,000	1,998,000	.35	4,752,000	1,629,000	.34
Total Government-and-contractor sand---------------	6,649,000	2,426,000	.36	5,646,000	1,942,000	.34
Gravel:						
Building-------------	2,145,000	1,225,000	.57	2,752,000	1,416,000	.51
Paving---------------	34,592,000	14,764,000	.43	53,641,000	19,932,000	.37
Total Government-and-contractor gravel-------------	36,737,000	15,989,000	.44	56,393,000	21,348,000	.38
Total Government-and-contractor sand and gravel---	43,386,000	18,415,000	.42	62,039,000	23,290,000	.38
COMMERCIAL AND GOVERNMENT-AND-CONTRACTOR OPERATIONS						
Sand-----------------	71,726,000	54,856,000	.76	96,440,000	74,975,000	.78
Gravel---------------	123,798,000	73,981,000	.60	157,691,000	96,411,000	.61
Grand total----	195,524,000	128,837,000	.66	254,131,000	171,386,000	.67

See footnotes on following page.

1/ Includes blast sand as follows--1945: 318,390 tons valued at $766,013; 1946: 292,899 tons, $736,819.

2/ Includes ballast sand produced by railroads for their own use as follows--1945: 17,792 tons valued at $2,429; 1946: 83,422 tons, $10,562.

3/ Includes some sand used by railroads for fills and similar purposes as follows--1945: 220,244 tons valued at $44,356; 1946: 164,061 tons, $30,658.

4/ Includes ballast gravel produced by railroads for their own use as follows--1945: 8,587,465 tons valued at $2,987,940; 1946: 4,077,115 tons, $1,640,726.

5/ Includes some gravel used by railroads for fills and similar purposes as follows--1945: 843,969 tons valued at $133,494; 1946: 637,462 tons, $107,938.

6/ Approximate figures for States, counties, municipalities, and other Government agencies directly or under lease.

Industrial sand sold or used by producers in the United States, 1942-46, by uses

Year	Glass sand		Molding sand		Grinding and polishing sand1/	
	Short tons	Value	Short tons	Value	Short tons	Value
1942-	3,622,487	$6,784,427	8,255,991	$10,745,552	806,878	$1,363,168
1943-	3,971,931	7,376,566	8,924,654	12,093,670	837,662	1,428,463
1944-	4,443,031	8,227,502	8,983,075	11,752,360	897,983	1,563,511
1945-	4,681,920	8,374,218	7,190,856	9,724,750	642,511	1,029,501
1946-	4,848,602	9,541,405	6,973,906	9,531,263	906,889	1,379,954

Year	Fire or furnace sand		Engine sand		Filter sand		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1942-	368,465	$491,972	2,559,008	$1,749,204	176,833	$223,137	15,789,662	$21,357,460
1943-	394,753	539,273	2, 62,025	1,983,364	158,555	258,547	17,149,580	23,679,883
1944-	362,978	479,711	2,852,648	1,993,119	146,008	263,922	17,685,723	24,280,125
1945-	308,997	387,872	2,771,896	1,924,725	109,845	231,026	15,706,025	21,672,092
1946-	248,866	333,643	2,797,132	1,924,779	157,511	284,991	15,932,906	22,996,035

1/ Includes blast sand as follows--1942: 422,922 tons, $1,071,018; 1943: 450,997 tons, $1,138,003; 1944: 482,293 tons, $1,228,744; 1945:318,390 tons, 766,013; 1946: 292,899 tons, $736,819.

Sand and gravel sold or used by commercial and Government-and-contractor producers in the United States in 1946, by States

State	Short tons	Value	State	Short tons	Value
Alabama	2,923,240	$1,937,576	Nevada	720,506	$944,332
Alaska	(1) (2)	(1) (2)	New Hampshire	1/1,434,880	1/138,789
Arizona	1,098,791	974,347	New Jersey	5,123,324	5,404,206
Arkansas	2/2,203,647	2/1,821,423	New Mexico	2/349,688	2/278,442
California	27,220,849	18,396,460	New York	12,079,249	8,907,100
Colorado	2,532,946	1,796,395	North Carolina	4,213,795	2,933,711
Connecticut	2,199,654	1,221,859	North Dakota	2,304,694	726,422
Delaware	187,229	125,532	Ohio	13,266,074	11,105,652
Florida	1,534,657	1,320,819	Oklahoma	1,577,138	947,283
Georgia	893,290	523,102	Oregon	5,419,183	4,578,672
Hawaii	(2)	(2)	Pennsylvania	10,773,213	10,984,330
Idaho	2,082,874	1,572,088	Puerto Rico	(2)	(2)
Illinois	16,771,242	11,458,969	Rhode Island	1/41,659	1/8,486
Indiana	8,752,267	5,656,047	South Carolina	524,271	214,964
Iowa	7,938,572	5,059,792	South Dakota	3,215,608	1,537,822
Kansas	4,443,086	2,505,822	Tennessee	4,011,591	3,632,603
Kentucky	2,163,754	1,802,063	Texas	11,188,849	8,086,097
Louisiana	3,585,097	3,080,215	Utah	1,053,010	992,085
Maine	2,834,360	925,308	Vermont	385,576	241,289
Maryland	4,001,071	3,720,103	Virginia	5,340,372	4,319,125
Massachusetts	4,641,685	2,909,784	Washington	7,557,707	4,508,392
Michigan	15,593,456	8,939,969	West Virginia	3,457,372	4,518,325
Minnesota	10,814,635	3,221,434	Wisconsin	14,828,715	6,802,828
Mississippi	2,619,293	1,533,631	Wyoming	2,005,951	1,129,598
Missouri	5,136,904	4,070,448	Undistributed 3/	4,290,000	2,510,000
Montana	2,428,681	1,301,867			
Nebraska	3,969,811	1,962,560		254,131,000	171,386,000

1/ Output of commercial producers included under "Undistributed."
2/ Output of Government-and-contractor operations included under "Undistributed."
3/ Items covered by "1" and "2."

Comparison of number and output of commercial sand and gravel plants in the United States, 1945-46, by size groups[1]

Size groups in short tons	1945				1946			
	Plants[2]		Production		Plants[2]		Production	
	Number	Per-cent of total	Short tons	Per-cent of total	Number	Per-cent of total	Short tons	Per-cent of total
Less than 25,000	1,001	47.6	9,345,000	6.6	838	39.5	7,601,000	4.0
25,000 and less than 50,000	370	17.6	13,394,000	9.4	365	17.2	13,254,000	7.1
50,000 and less than 100,000	328	15.6	23,219,000	16.3	398	18.8	28,196,000	15.1
100,000 and less than 200,000	238	11.3	33,590,000	23.6	277	13.1	39,424,000	21.1
200,000 and less than 300,000	78	3.7	19,089,000	13.4	115	5.4	27,675,000	14.8
300,000 and less than 400,000	44	2.1	15,039,000	10.6	52	2.4	18,019,000	9.6
400,000 and less than 500,000	16	.8	7,023,000	4.9	28	1.3	12,451,000	6.6
500,000 and less than 600,000	9	.5	4,731,000	3.3	16	.8	8,620,000	4.6
600,000 and less than 700,000	6	.3	3,909,000	2.7	9	.4	5,927,000	3.2
700,000 and less than 800,000	3	.1	2,206,000	1.5	2	.1	1,468,000	.8
800,000 and less than 900,000	3	.1	2,520,000	1.8	7	.3	6,119,000	3.3
900,000 and less than 1,000,000	3	.1	2,800,000	2.0	2	.1	1,907,000	1.0
1,000,000 and over	4	.2	5,604,000	3.9	12	.6	16,469,000	8.8
	2,103	100.0	142,469,000	100.0	2,121	100.0	187,130,000	100.0

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[1] Plants operated by or for States, counties, municipalities and other Government agencies are not included; also not included are approximately 165 railroad plants with an output of 9,669,000 tons of sand and gravel in 1945 and 133 plants with an output of 4,962,000 tons in 1946.

[2] Includes a few companies operating more than 1 plant but not submitting separate returns for individual plants.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

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MINERAL MARKET REPORT
MMS NO. 1544

TALC, PYROPHYLLITE, AND GROUND SOAPSTONE INDUSTRIES OF THE UNITED STATES IN 1946 1/

GENERAL CONDITIONS

A new high record in the mine production of talc, pyrophyllite, and ground soapstone was made in 1946, according to reports by producers to the Bureau of Mines, United States Department of Interior. All-time records were also made in both quantity and value of these commodities sold or used. Total imports were much larger in 1946 than in 1945 both in quantity and value, owing to the increased quantity of ground materials brought in. Exports of "talc, steatite, soapstone, and pyrophyllite, crude and ground" increased both in quantity and value in 1946, and exports of "powder--talcum (in packages), face, and compact" were over a million dollars greater in value in 1946 than they were in 1945.

Twelve States reported sales of talc, pyrophyllite, or ground soapstone in 1946, one less than in 1945, no talc being reported as sold from New Mexico. The greater part of the total sales in 1946 was made in the Eastern States.

1/ Soapstone sold in slabs or blocks is not included.

Prepared by Bertrand L. Johnson and F. M. Barsigian, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division; Economics and Statistics Branch.

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Salient statistics of the talc, pyrophyllite, 1/ and ground-soapstone industries in the United States, 1945-46

	1945		1946	
	Short tons	Value	Short tons	Value
Mined:				
Sold crude	2/35,979	2/$367,488	36,963	$348,484
Used by producers	2/378,471	(3)	423,591	(3)
	2/414,450	(3)	460,554	(3)
Sold by producers:				
Crude	2/35,979	2/ 367,488	36,963	348,484
Sawed and manufactured	2/ 733	2/ 182,904	756	227,751
Ground	2/361,672	2/4,856,843	419,347	5,869,109
	2/398,384	2/5,407,235	457,066	6,445,344
Imports for consumption: 4/				
Crude and unground steatite and French chalk	385	20,980	8	530
Cut and sawed	122	17,618	34	4,856
Ground, washed, or pulverized	6,192	63,260	18,407	394,881
	6,699	101,858	18,449	400,267
Exports:				
Talc, steatite, soapstone, and pyrophyllite, crude and ground	11,141	279,178	16,373	394,799
Powder-talcum (in packages), face, and compact	(5)	2,276,758	(5)	3,517,827
	------	2,555,936	------	3,912,626

1/ In 1945: Mined, 77,716 short tons. Sold--crude, 6,215 tons, $38,166; ground, 71,379 tons, $613,034; total, 77,594 tons, $651,200. In 1946: Mined, 97,765 short tons. Sold--crude, 10,716 tons, $85,002; ground, 85,835 tons, $913,301; total, 96,551 tons, $998,303 (exclusive of pinite).

2/ Revised figures.

3/ Data not available.

4/ Exclusive of "Manufactures, n. s. p. f., except toilet preparations," as follows: 1945: $63; 1946: $15,687. Quantities not available.

5/ Quantity not recorded.

SALES

The quantity of domestic talc, pyrophyllite, and ground soapstone sold or used in 1946 was considerably greater than in 1945, according to reports of the producers to the Bureau of Mines. This output, 457,066 short tons--was a new record--exceeding the former record set in 1941 by over 40,000 tons. The total value of $6,445,344 in 1946 was over a million dollars greater than in 1945 and was an all-time record. The average value per ton rose from $13.57 in 1945 (revised figures) to $14.10 in 1946.

Talc, pyrophyllite, 1/ and ground soapstone sold by producers in the United States, 1942-46, by classes

Year	Crude			Sawed and manufactured		
	Short tons	Value at shipping point		Short tons	Value at shipping point	
		Total	Average		Total	Average
1942..........	2/33,837	2/$303,166	2/$8.96	1,505	$370,631	$246.27
1943..........	30,200	289,563	9.59	1,669	316,973	189.92
1944..........	2/45,654	2/ 514,476	2/11.27	938	223,924	238.72
1945 3/.......	35,979	367,488	10.21	733	182,904	249.53
1946..........	36,963	348,484	9.43	756	227,751	301.26

Year	Ground			Total		
	Short tons	Value at shipping point		Short tons	Value at shipping point	
		Total	Average		Total	Average
1942..........	352,621	$4,080,279	$11.57	387,963	$4,754,076	$12.25
1943..........	380,999	4,514,878	11.85	412,868	5,121,414	12.40
1944..........	352,271	4,279,062	12.15	398,863	5,017,462	12.58
1945 3/.......	361,672	4,856,843	13.43	398,384	5,407,235	13.57
1946..........	419,347	5,369,109	14.00	457,066	6,445,344	14.10

1/ In 1945: Crude, 6,215 tons, $38,166; ground, 71,379 tons, $613,034; total, 77,594 tons, $651,200. In 1946: Crude, 10,716 tons, $85,002; ground, 85,835 tons, $913,301; total, 96,551 tons, $998,303.
2/ Includes pinite from Nevada.
3/ Revised figures.

Sales by States. - New York, in 1946, was still the leading producing State by a considerable margin, with North Carolina in second place. Increased sales were reported in many of the States in 1946. Sales of the leading States, California, Georgia, and North Carolina, reached new levels. Total sales of pyrophyllite, most of which comes from North Carolina, increased 24 percent in 1946 over 1945.

Talc, pyrophyllite, and ground soapstone sold by producers in the United States, 1945-46, by States

State	1/ 1945		1946	
	Short tons	Value	Short tons	Value
California	67,321	$1,254,143	78,170	$1,434,976
Georgia	32,433	296,163	36,410	380,477
Maryland, Pennsylvania, and Virginia	34,084	329,631	42,505	424,334
Nevada	11,730	135,059	7,589	141,180
North Carolina	78,369	682,510	87,718	976,524
Vermont	63,574	752,583	75,144	843,247
Washington	2,804	33,458	5,084	33,051
Other States 2/	108,019	1,373,688	124,446	2,206,553
	398,384	5,407,235	457,066	6,445,344

1/ Revised figures.
2/ 1945: Montana, New Mexico, New York, and Texas. 1946: Montana, New York, and Texas.

MARKETS

Five industries--paint, rubber, roofing, ceramics, and insecticides--consumed 77 percent of the sales of domestically produced talc, pyrophyllite, and ground soapstone, in 1946, according to reports from the producers. Increases were reported in sales to the paint, rubber, roofing, ceramics, insecticides, and paper industries. Especially notable were the increases in the ceramic and insecticides industries. Consumption in paint was easily the leading use with 23 percent of the total. The rubber, ceramics, and insecticides industries were close competitors for second place each taking about 14 percent of the total.

Distribution of domestic talc, pyrophyllite, and ground soapstone sold by producers in the United States, 1945-46, by uses 1/

Use	2/ 1945		1946	
	Short tons	Percent of total	Short tons	Percent of total
Paint	103,583	26	103,328	23
Rubber	63,758	16	65,980	14
Roofing	46,783	12	54,581	12
Ceramics	37,889	10	62,389	14
Insecticides	37,012	9	64,954	14
Paper	28,138	7	32,300	7
Toilet preparations	21,543	5	17,111	4
Foundry facings	7,072	2	7,045	2
Crayons	336	(3)	306	(3)
Other uses reported 4/	23,506	6	24,803	5
Use not reported	28,764	7	23,769	5
	398,384	100	457,066	100

1/ Partly estimated. 2/ Revised figures. 3/ Less than 0.50 percent. 4/ 1945: Textile, refractory, plaster, plastics, agriculture, and other minor uses. 1946: Asphalt filler, refractory, textile, plaster, plastics, agriculture, and other minor uses.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

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FOR RELEASE SEPTEMBER 11, 1947.

MINERAL MARKET REPORT
No. M. M. S. 1545

PENNSYLVANIA ANTHRACITE 1946 1/

According to the Bureau of Mines, United States Department of the Interior the production of Pennsylvania anthracite in 1946 totaled 60,506,873 net tons, a gain of 10 percent over the output in 1945. The increase in production is attributable to several factors: (1) A more plentiful supply of labor, (2) less costly labor disturbances in 1946 than in 1945, and (3) the lifting of government restrictions on mining equipment, which enabled the operators to obtain necessary supplies more readily. Of the total production, 63 percent was obtained from deep mines; 21 percent, from strip pits; 14 percent, from culm banks; and 2 percent was recovered from the rivers and creeks draining the anthracite fields. The output of 12,858,930 tons from strip-pit operations was the highest on record, and tonnage of anthracite loaded mechanically underground reached a peak of 15,619,162 tons, both reflecting the ability of the producers to obtain equipment and supplies more readily. The industry operated 271 days against 269 days in 1945. Exports reached a peak of 6,506,829 tons; the large increase over 1945 is due principally to the heavy shipments of Buckwheat Nos. 4 and 5 sizes to Europe.

Anthracite was distributed widely during the 1945-46 coal year. Of the total shipments from the mines 89 percent was destined to the New England and Middle Atlantic States, Maryland, Delaware, and the District of Columbia; other States received 4 percent; shipments to Canada, and other foreign countries, accounted for 7 percent.

OUTLOOK

The anthracite markets should absorb readily available supplies of anthracite in the 1947-48 coal year. In fact, it is quite probable that the overall supply of anthracite will not be sufficient to meet requirements unless production during the latter part of the year shows a very substantial gain over the output during the first part of the year. It is true that many mines worked only 3, 4, or 5 days a week during the first part of the 1947-48 coal year because the markets would not absorb more production. This was due principally to the lack of buying by consumers who ordinarily purchase a substantial part of their winter requirement of anthracite during the summer months. The efforts on the part of the industry to have these consumers purchase part of their winter requirements during the non-heating season should tend to alleviate acute demands during the winter months. A number of factors account for the heavy potential demand for anthracite; (1) Large exports to Canada and to European countries (principally small sizes), (2) additional anthracite required in new housing, (3) the occupation of and need for fuel by many houses which prior to the war were vacant, (4) high purchasing power of consumers, and (5) the withdrawal of coke from the domestic market. In order to retain its markets subsequent to 1947-48 the industry should work closely with builders, architects, and heating equipment manufacturers to obtain a fair share of the fuel business created by the millions of new homes which will be built during the next 10 years; the installation of automatic coal-burning equipment for both home and industrial purposes should be encouraged; concentrated merchandising programs, the search for new markets, and research on new uses for anthracite and upgrading of fine sizes should be continued.

1/ This report contains selected tables showing final statistics of the Pennsylvania anthracite industry for 1946. The complete report with detailed tables to be released shortly as a chapter of Minerals Yearbook 1946, will be distributed to the regular mailing list.

Prepared by Marian I. Cooke and J. A. Corgan, Chief, Anthracite and Coke Section under the supervision of T. W. Hunter, Chief, Coal Economics Division, Economics and Statistics Branch.

TABLE 1--Statistical trends of Pennsylvania anthracite industry, 1942-46

	1942	1943	1944	1945	1946
Production:					
Loaded at mines for shipment:					
Breakers---------------- net tons	51,173,756	1/50,812,873	53,067,227	45,249,706	50,115,427
Washeries---------------- " "	1,957,926	1/2,401,065	3,492,187	2,551,426	3,106,521
Dredges---------------- " "	778,019	821,899	1,081,156	741,319	886,639
Sold to local trade and used by employees-------------- " "	4,059,403	4,233,732	3,765,641	4,273,864	4,435,536
Used at collieries for power and heat---------------- " "	2,358,625	2,374,051	2,295,152	2,117,594	1,962,750
Total production---------- " "	60,327,729	60,643,620	63,701,363	54,933,909	60,506,873
Value at breaker, washery, or dredge------	$271,673,000	$306,816,018	$354,582,884	$323,944,435	$413,417,070
Average sales realization per net ton on breaker shipments:					
Domestic:					
Lump and Broken----------------------	$6.03	$6.77	$7.47	$8.02	$9.23
Egg----------------------------------	6.24	6.96	7.56	8.13	9.38
Stove--------------------------------	6.26	6.96	7.57	8.10	9.40
Chestnut-----------------------------	6.28	6.97	7.58	8.12	9.42
Pea----------------------------------	4.85	5.48	6.11	6.62	7.79
Total domestic-----------------------	6.05	6.76	7.38	7.93	9.21
Steam:					
Buckwheat No. 1----------------------	3.46	4.00	4.52	4.79	5.53
Buckwheat No. 2 (Rice)---------------	2.63	3.12	3.59	3.91	4.52
Buckwheat No. 3 (Barley)-------------	1.89	2.25	2.53	2.65	3.11
Buckwheat No. 4----------------------	1.17	1.55	1.82	1.85	2.09
Other (including silt)---------------	.83	1.13	1.39	1.58	1.90
Total steam--------------------------	2.58	3.02	3.42	3.56	4.08
Total all sizes----------------------	4.79	5.38	5.91	6.26	7.25
Percent by sizes in total breaker shipments:					
Domestic:					
Lump and Broken----------------------	0.3	0.4	0.3	0.3	0.3
Egg----------------------------------	5.2	7.1	7.1	6.5	6.3
Stove--------------------------------	23.6	22.4	21.9	21.7	22.0
Chestnut-----------------------------	24.9	24.5	25.2	25.5	25.8
Pea----------------------------------	9.6	8.7	8.3	7.8	7.4
Total domestic-----------------------	63.6	63.1	62.8	61.8	61.8
Steam:					
Buckwheat No. 1----------------------	14.5	14.2	14.2	14.1	13.9
Buckwheat No. 2 (Rice)---------------	8.0	8.3	8.5	8.1	7.8
Buckwheat No. 3 (Barley)-------------	9.6	9.9	9.7	9.9	9.8
Buckwheat No. 4----------------------	3.3	3.0	3.1	3.6	4.0
Other (including silt)---------------	1.0	1.5	1.7	2.5	2.7
Total steam--------------------------	36.4	36.9	37.2	38.2	38.2
Producers' stocks 2/------------ net tons	798,000	329,000	445,000	130,000	251,168
Exports 3/-------------------- " "	4,439,000	4,139,000	4,186,000	3,691,000	6,506,829
Imports 3/-------------------- " "	140,000	166,000	12,000	149	9,556
Consumption (calculated)-------- " "	56,500,000	57,100,000	59,400,000	51,600,000	53,900,000
Average number of days worked-------------	239	270	292	269	271
Man-days lost on account of strikes and lock-outs--------------------------------	279,641	(4)	(4)	(4)	(4)
Number of men on strike during year-------	26,631	(4)	(4)	(4)	(4)
Average number of men employed------------	82,121	79,153	77,591	72,842	78,145
Output per man per day---------- net tons	2.95	2.78	2.79	2.79	2.84
Output per man per year--------- " "	705	751	815	751	770
Quantity cut by machines-------- " "	2,285,640	1,624,883	1,336,082	1,210,171	1,232,828
Quantity mined by stripping----- " "	9,070,933	8,989,387	10,953,030	10,056,325	12,858,930
Quantity loaded by machines underground---------------------- net tons	14,741,459	14,745,793	14,975,146	13,927,955	15,619,162
Distribution:					
Total receipts in New England 5/ net tons	5,974,000	5,722,000	6,222,000	5,081,000	5,643,076
Exports to Canada 3/---------- " "	4,418,000	4,097,000	4,144,000	3,393,000	4,513,637
Loaded into vessels at Lake Erie 6/--------------- " "	575,000	661,000	1,066,000	1,234,000	1,112,996
Receipts at Duluth-Superior 7/ " "	222,000	302,000	580,000	766,000	639,900

1/ Small quantity of washery coal included under "Breakers."
2/ Anthracite Committee.
3/ U. S. Department of Commerce.
4/ Data not available.
5/ Commonwealth of Massachusetts, Division on the Necessaries of Life, and Association of American Railroads.
6/ Ore and Coal Exchange, Cleveland, Ohio.
7/ U. S. Engineer Office, Duluth, Minn.

Table 2.--Statistical summary of monthly developments in the Pennsylvania anthracite industry in 1946

[All tonnage figures represent net tons]

	1946												Year		
	January	February	March	April	May	June	July	August	September	October	November	December	Total	Change from 1945 (percent)	1945 (total)
Production, including mine fuel, local sales, and dredge coal:															
Monthly total	4,968,000	4,774,000	5,476,000	5,069,000	5,453,000	3,625,000	5,248,000	5,428,000	5,033,000	5,393,000	4,975,000	5,065,000	60,507,000	+ 10.1	54,934,000
Shipments, breakers and washeries only, monthly total, all sizes:															
By rail 1/	3,762,782	3,808,171	4,464,210	4,177,699	4,508,455	3,170,637	4,495,746	4,793,488	4,511,592	4,563,943	4,362,239	4,457,085	51,076,047	+13.3	45,086,717
By truck 2/	840,188	759,560	907,944	693,878	788,441	362,683	360,788	424,292	526,893	660,330	667,114	665,979	7,658,090	+ 0.8	7,596,109
Distribution:															
Lake Erie loadings 3/	---	---	---	112,393	170,347	130,960	148,559	92,531	125,297	183,105	140,990	8,814	1,112,996	-9.8	1,233,586
Lake Ontario loadings 4/	---	---	---	20,945	41,023	18,731	48,211	31,274	34,751	41,328	15,550	---	251,813	-26.3	341,774
Receipts at Duluth-Superior 5/	---	---	---	8,749	84,296	114,368	107,684	60,821	61,613	129,289	73,080	---	639,900	-16.4	765,543
Upper Lake dock trade: 6/															
Receipts:															
Lake Superior	---	---	---	15,751	92,756	114,365	102,498	69,015	69,103	132,462	88,236	6,573	690,759	-14.1	804,509
Lake Michigan	1,164	1,746	4,193	36,650	97,204	23,148	60,303	35,794	45,365	54,825	34,650	10,723	405,765	- 2.8	417,660
Deliveries (reloadings):															
Lake Superior	79,513	55,763	32,510	6,664	15,241	43,289	80,502	71,742	77,031	82,689	87,753	86,529	719,226	+2.6	701,020
Lake Michigan	39,776	31,004	20,090	22,201	55,415	27,203	43,585	38,793	36,265	42,609	30,369	30,410	417,720	+4.8	398,418
New England receipts:															
By tide 7/	32,538	23,752	29,182	41,629	51,595	18,745	39,379	36,925	31,851	43,258	19,387	30,384	398,625	+20.3	331,277
By rail 8/	387,143	452,111	425,745	397,537	416,014	303,180	493,620	484,738	464,044	509,865	444,809	465,645	5,244,451	+10.4	4,749,621
Exports 9/	317,126	313,773	381,657	387,193	546,258	365,914	657,289	761,359	717,361	545,500	556,160	957,239	6,506,829	+76.3	3,691,247
Imports 9/	---	---	---	---	---	1,323	1,485	---	1,869	3,932	906	41	9,556	+6313.4	149
Industrial consumption and stocks by:															
Railroads (class 1 only): 7/															
Consumption	191,611	98,364	88,691	87,960	108,159	65,370	59,055	61,752	56,820	65,410	80,640	115,196	1,079,028	+6.9	1,009,038
Stocks	98,849	101,754	103,948	114,719	130,291	117,613	117,498	122,792	122,855	119,211	122,045	117,860	117,860	+3.6	113,745
Electric-power utilities: 10/															
Consumption	260,843	243,791	246,291	281,906	352,450	249,476	273,047	295,566	302,712	294,905	317,397	334,942	3,453,326	+10.6	3,121,653
Stocks	1,543,821	1,513,336	1,555,653	1,552,993	1,494,661	1,483,673	1,545,642	1,594,580	1,643,366	1,728,947	1,717,136	1,703,659	1,703,659	+ 7.6	1,583,515
Stocks on Upper Lake docks: 6/															
Lake Superior	177,644	116,311	74,312	83,399	160,913	231,989	254,165	251,438	243,510	293,283	293,766	213,808	213,808	-16.9	257,158
Lake Michigan	88,985	59,727	43,830	58,279	100,068	96,013	112,731	109,732	118,832	131,048	135,329	115,642	115,642	-9.4	127,597
Producers' stocks 11/	157,117	191,984	213,810	175,705	79,236	63,459	82,719	93,976	132,300	200,108	235,604	251,168	251,168	+93.0	130,135
Sales of mechanical stokers: 9/															
Class 1 (capacity under 61 lb. of coal per hour)	410	690	610	569	451	508	590	697	826	897	505	291	7,044	+111.8	3,325
Class 2 (capacity 61 to 100 lb. of coal per hour)	84	84	34	92	46	39	70	120	96	114	89	40	908	-51.8	1,883
Prices at mines, average per net ton: 12/															
Group No. 1:															
Company Stove	$9.00	$9.00	$9.00	$9.00	$9.00	$9.23	$10.15	$10.15	$10.15	$10.15	$10.15	$10.15	$9.59	+14.2	$8.40
Company Buckwheat No. 1	$5.25	$5.25	$5.25	$5.25	$5.25	$5.39	$5.95	$5.95	$5.95	$5.95	$5.95	$5.95	$5.61	+13.8	$4.93
Group No. 2:															
Company Stove	$9.50	$9.50	$9.50	$9.50	$9.50	$9.73	$10.65	$10.65	$10.65	$10.65	$10.65	$10.65	$10.09	+19.5	$8.44
Company Buckwheat No. 1	$5.70	$5.70	$5.70	$5.70	$5.70	$5.84	$6.40	$6.40	$6.40	$6.40	$6.40	$6.40	$6.06	+22.2	$4.96
Wholesale prices: 13/															
On tracks, destination:															
Chestnut	$12.45	$12.47	$12.47	$12.47	$12.48	$12.73	$13.62	$13.58	$13.59	$13.59	$13.60	$13.62	$13.06	+9.8	$11.89
Pea	$10.96	$10.96	$10.96	$10.96	$10.97	$11.20	$11.99	$11.95	$11.97	$11.97	$11.97	$11.99	$11.49	+10.4	$10.41
Index numbers (1926 = 100)	103.9	104.0	104.0	104.0	104.1	106.1	114.5	113.4	113.5	113.5	113.5	113.7	109.0	+10.1	99.0
Labor conditions: 13/															
Average weekly earnings	$48.63	$56.84	$56.10	$52.08	$57.47	$59.58	$49.53	$60.65	$60.67	$61.82	$56.57	$65.82	$57.15	+16.7	$48.98
Average hourly earnings	$1.339	$1.376	$1.376	$1.352	$1.382	$1.559	$1.562	$1.598	$1.611	$1.593	$1.582	$1.615	$1.494	+19.3	$1.252
Average hours worked per week	36.4	41.2	41.0	38.6	41.7	38.2	31.7	37.9	37.7	39.2	35.7	40.9	38.3	-2.3	39.2
Index of employment (1939 average = 100)	79.3	81.1	81.7	81.4	81.0	79.0	81.4	82.0	82.2	83.2	82.9	83.0	81.6	+12.4	72.6
Index of payroll totals (1939 average = 100)	149.3	178.3	178.5	165.1	180.4	182.7	156.5	193.3	194.0	199.9	182.3	212.3	181.1	+31.3	137.9

1/Furnished by Anthracite Institute.
2/Pennsylvania Department of Mines.
3/Ore and Coal Exchange, Cleveland, Ohio.
4/Buffalo Branch, Ore and Coal Exchange, Cleveland, Ohio.
5/U. S. Engineer Office, Duluth, Minn.
6/Includes all commercial docks on Lake Superior and west shore of Lake Michigan as far south as Kenosha. Based on data courteously supplied by Maher Coal Bureau and direct reports to the Bureau of Mines.
7/Association of American Railroads.
8/Furnished by Commonwealth of Massachusetts, Division on the Necessaries of Life.
9/U. S. Department of Commerce.
10/Federal Power Commission.
11/Anthracite Committee. Represents coal in storage closest available date to the end of the month.
12/Computed from weekly quotations from trade journals. Figures represent circular prices quoted on white ash by leading anthracite-producing companies.
13/Bureau of Labor Statistics.

TABLE 3 --Apparent consumption of anthracite and selected competitive fuels in the principal anthracite markets, 1943-46

(Thousands of net tons)

Fuel	New England	New York	New Jersey	Delaware	Maryland	Penn-sylvania	District of Columbia	Total: Thousands of net tons	Total: Percent of total fuels
Anthracite:									
All users: [1]									
1943	5,604	[2] 18,555	[2] 9,527	362	873	16,540	320	51,781	61.7
1944	6,004	[2] 17,489	[2] 10,254	380	1,016	17,744	325	53,212	62.3
1945	4,867	[2] 14,488	[2] 8,666	343	868	15,776	270	45,278	56.5
1946	5,367	[2] 16,103	[2] 8,663	424	878	17,525	281	49,241	(3)
Imports: [4]									
1943	164	2	---	---	---	---	---	166	.2
1944	12	---	---	---	---	---	---	12	(5)
1945	---	---	---	---	---	---	---	(6)	(5)
1946	---	---	---	---	---	---	---	---	(3)
Briquets:									
Domestic use:									
1943	53	31	2	(6)	4	27	1	118	.1
1944	76	48	12	3	7	45	1	192	.2
1945	83	67	16	3	10	52	2	233	.3
1946	121	94	28	4	21	50	2	320	(3)
Imports: [4]									
1943	---	---	---	---	---	---	---	(6)	(5)
1944	---	---	---	---	---	---	---	(6)	(5)
1945	---	---	---	---	---	---	---	(6)	(5)
1946	---	---	---	---	---	---	---	(6)	(3)
Coke:									
Domestic use:									
1943	1,265	969	329	3	1	321	(6)	2,888	3.4
1944	1,352	1,232	464	7	4	386	1	3,446	4.1
1945	1,371	1,375	552	5	2	334	2	3,641	4.6
1946	1,085	987	469	3	5	291	(6)	2,840	(3)
Imports: [4]									
1943	1	52	---	---	---	---	---	53	.1
1944	(6)	23	---	---	---	---	---	23	(5)
1945	1	19	---	---	---	---	---	20	(5)
1946	(6)	11	---	---	---	---	---	11	(3)
Oil: Heating and range: [7]									
1943	10,367	9,795	4,490	144	970	2,620	552	28,938	34.5
1944	10,411	9,554	4,442	140	988	2,496	526	28,557	33.4
1945	11,205	10,095	5,037	154	1,136	2,728	584	30,939	38.6
1946	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Total fuel: [8]									
1943	17,454	29,404	14,348	509	1,848	19,508	873	83,944	100.0
1944	17,855	28,346	15,172	530	2,015	20,671	853	85,442	100.0
1945	17,527	26,044	14,271	505	2,016	18,890	858	80,111	100.0
1946	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)

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[1] Pennsylvania Department of Mines; illicit coal not included.
[2] An important but undetermined part of anthracite shown as shipped to New Jersey is reshipped to New York City.
[3] Data not yet available.
[4] U. S. Department of Commerce.
[5] Less than 0.05 percent.
[6] Less than 1,000 tons.
[7] Converted to coal equivalent upon basis of 4 barrels of fuel oil equaling 1 ton of coal.
[8] Excludes bituminous coal.

TABLE 4 --Total supplies of fuels commonly used for space-heating purposes in the United States, 1937 and 1943-46

(Wherever available, figures represent quantity actually consumed for domestic heating or for space heating offices, apartments, hotels, schools, hospitals, etc. Where such figures are not available but where the fuel is known to be used chiefly for domestic or space-heating purposes, total production (or imports) is shown to indicate trend of growth.)

	1937	1943	1944	1945	1946
Solid Fuels (net tons)					
Anthracite:					
Production:					
Shipments of domestic sizes	29,092,974	32,563,787	34,343,434	28,610,174	31,607,802
Shipments of Buckwheat No. 1	6,859,707	7,537,642	8,083,664	6,681,171	7,181,843
Shipments of smaller steam sizes 1/	10,250,463	13,934,408	15,213,472	13,251,106	15,318,942
Local sales	2,981,391	4,233,732	3,765,641	4,273,864	4,435,536
Total commercial production	49,184,535	58,269,569	61,406,211	52,816,315	58,544,123
Exports 2/	1,914,173	4,138,680	4,185,933	3,691,247	6,506,829
Imports for consumption 2/	395,737	166,020	11,847	149	9,556
Fuel briquets 3/	977,254	1,989,223	2,301,827	2,588,819	2,841,341
Packaged-fuel production	146,037	215,605	175,770	208,143	190,919
Coke:					
Oven coke sales for domestic use	7,807,792	4,784,090	6,443,329	6,574,526	4,947,085
Beehive sales for domestic use	299,726	101,438	274,214	200,982	149,648
Imports for consumption 2/	286,364	98,127	63,004	51,964	52,188
Retort coke sales	4/ 350,700	518,825	423,675	431,361	355,336
Petroleum-coke production	1,306,600	1,388,400	1,803,400	2,023,000	2,124,200
Anthracite and semianthracite production outside of Pennsylvania	468,852	(5)	(5)	(5)	(5)
Lignite production 6/	3,218,419	2,749,393	2,554,160	2,668,310	(7)
Bituminous-coal sales for domestic use	(8)	(8)	(8)	(8)	(8)
Oil (Barrels of 42 Gallons)					
Oil sales for heating buildings:					
Range oil	32,259,000	44,097,000	47,636,000	51,021,000	9/ 62,500,000
Heating oils: 10/					
Domestic	116,617,000	155,251,000	152,203,000	165,216,000	9/ 187,000,000
Commercial					
Liquefied petroleum gases, domestic	972,000	8,080,000	10,442,000	12,697,000	18,242,000
Gas (Million Cubic Feet)					
Natural-gas consumption for domestic and commercial use 11/	489,234	734,237	782,930	837,499	887,300
Manufactured-gas sales for: 12/					
Domestic use	193,325	208,397	215,157	(7)	(7)
House heating	45,200	83,686	84,766	(7)	(7)

1/ A considerable part of the smaller steam sizes is used by industries, railroads, and public utilities.
2/ U. S. Department of Commerce.
3/ Production plus imports less exports.
4/ Partly estimated.
5/ Data not available.
6/ An estimated one-half is used for domestic purposes.
7/ Data not yet available.
8/ Exact data not available.
9/ Estimated.
10/ Includes all grades of fuel oil used for heating buildings.
11/ Includes gas used for heating offices, hotels, apartments, hospitals, stores, and other large buildings, as well as houses.
12/ American Gas Association.

TABLE 5 .--Rail shipments of Pennsylvania anthracite, 1944-46, by destinations, in net tons 1/
(Truck shipments excluded)

Destination	1944	1945	1946
New England States	6,003,552	4,867,051	5,367,460
New York	16,821,928	13,867,150	15,440,475
New Jersey	9,465,559	7,963,782	7,945,666
Pennsylvania	11,693,186	9,647,371	11,360,229
Delaware	317,539	297,056	389,100
Maryland	905,993	784,863	816,268
District of Columbia	323,923	269,278	280,324
Virginia	147,013	128,642	126,187
Ohio	136,781	109,508	96,179
Indiana	85,124	87,123	100,077
Illinois	463,936	529,549	343,354
Wisconsin	392,696	470,501	524,066
Minnesota	146,857	108,210	55,231
Michigan	245,751	239,031	285,351
Other States	64,325	72,573	65,502
Total United States	47,214,163	39,441,688	43,195,469
Canada	3,675,870	3,059,062	3,818,303
Other foreign countries	5,118	16,079	------------
Grand total	50,895,151	42,516,829	47,013,772

1/ Pennsylvania Department of Mines.

Table 6 . - Truck shipments of Pennsylvania anthracite in 1946, by months, and by States of destination, in net tons 1/

Destination	January	February	March	April	May	June	July
Pennsylvania:							
Within region	486,729	450,974	460,341	366,719	432,828	179,533	147,631
Outside region	201,232	177,375	235,281	188,412	194,928	99,147	142,329
New York	68,069	48,445	109,444	65,037	79,386	41,982	24,245
New Jersey	69,121	70,459	84,184	64,539	71,957	38,485	43,353
Delaware	9,481	4,607	4,276	3,026	2,602	793	430
Maryland	4,124	6,593	12,329	4,713	5,115	1,950	2,045
District of Columbia	----	----	166	119	7	----	----
Other States	1,432	1,107	1,923	1,313	1,618	793	755
Total: 1946	840,188	759,560	907,944	693,878	788,441	362,683	360,788
1945	799,898	803,065	606,448	707,774	305,759	676,993	582,822

Destination	August	September	October	November	December	Total	Percent of total trucked
Pennsylvania:							
Within region	202,872	252,884	337,214	379,607	393,313	4,090,645	53.4
Outside region	149,521	167,593	177,298	172,627	167,906	2,073,649	27.1
New York	22,396	49,011	59,092	48,786	46,997	662,890	8.7
New Jersey	46,552	48,065	77,722	56,233	47,173	717,843	9.4
Delaware	522	1,345	2,121	2,583	2,893	34,679	.4
Maryland	1,397	6,658	5,617	5,335	6,051	61,927	.8
District of Columbia	----	----	----	----	----	292	(2)
Other States	1,032	1,337	1,266	1,943	1,646	16,165	.2
Total: 1946	424,292	526,893	660,330	667,114	665,979	7,658,090	100.0
1945	608,668	565,641	628,881	543,806	766,354	7,596,109	100.0

1/ Compiled from reports of Pennsylvania Department of Mines.
2/ Less than 0.05 percent.

TABLE 7 --Estimated weekly production of Pennsylvania anthracite in 1946

Week ended -	Net tons	Week ended -	Net tons	Week ended -	Net tons
Jan. 5	1/ 595,000	May 18	1,333,000	Sept. 28	1,260,000
12	1,210,000	25	1,011,000	Oct. 5	1,246,000
19	1,127,000	June 1	747,000	12	1,192,000
26	1,210,000	8	46,000	19	1,199,000
Feb. 2	1,243,000	15	1,116,000	26	1,292,000
9	1,162,000	22	1,193,000	Nov. 2	846,000
16	1,232,000	29	1,257,000	9	1,270,000
23	1,134,000	July 6	664,000	16	1,193,000
Mar. 2	1,235,000	13	1,285,000	23	1,187,000
9	1,195,000	20	1,336,000	30	1,160,000
16	1,272,000	27	1,301,000	Dec. 7	1,251,000
23	1,297,000	Aug. 3	1,209,000	14	1,347,000
30	1,306,000	10	1,252,000	21	1,272,000
Apr. 6	1,058,000	17	1,086,000	28	818,000
13	1,335,000	24	1,269,000	31	1/ 377,000
20	1,097,000	31	1,274,000		
27	1,110,000	Sept. 7	1,029,000		
May 4	1,405,000	14	1,251,000	Calendar year	60,507,000
11	1,439,000	21	1,276,000		

1/ Figures represent output of working days in that part of week included in the calendar year 1946. Preliminary production for week of January 4, 1947, was 831,000 tons. Revised total for week of January 5, 1946, was 735,000 tons.

TABLE 8. - Pennsylvania anthracite produced in 1946, by counties

County	Total shipments		Sold to local trade		Used for power and heat		Total production	
	Net tons	Value 1/	Net tons	Value	Net tons	Value	Net tons	Value 1/
Berks, Lancaster, Lebanon, Northampton, and Snyder 2/	233,385	$416,621	9,940	$14,705	35	$240	243,360	$431,566
Carbon	3,706,707	24,883,256	215,713	1,905,520	89,575	421,265	4,011,995	27,210,041
Columbia	1,272,016	9,526,302	69,049	388,024	52,752	114,225	1,393,817	10,028,551
Dauphin	99,106	379,295	174,728	327,876	1,651	5,436	275,485	712,607
Lackawanna	7,342,424	52,865,498	1,074,451	8,107,452	342,347	981,495	8,759,222	61,954,445
Luzerne	19,238,980	148,862,376	1,667,723	11,833,079	1,220,347	2,740,167	22,127,050	163,435,622
Northumberland	5,758,847	34,617,030	472,479	3,339,248	34,894	69,364	6,266,220	38,025,642
Schuylkill	16,208,200	104,180,634	717,239	5,346,114	211,040	667,413	17,136,479	110,194,161
Sullivan	74,950	464,406	31,589	203,270	550	3,177	107,089	670,853
Susquehanna and Wayne	173,972	712,936	2,625	22,262	9,559	18,334	186,156	753,582
Total	54,108,587	376,908,404	4,435,536	31,487,550	1,962,750	5,021,116	60,506,873	413,417,070

1/ Value given for shipments is value at which coal left possession of producing company and does not include margins of separately incorporated sales companies.

2/ Counties producing dredge coal only.

TABLE 9. - Pennsylvania anthracite shipped in 1946, by regions and sizes

Size	Breaker shipments 1/						Washery shipments		Dredge shipments	Grand total
	Lehigh region	Schuylkill region	Wyoming region	Sullivan County	Total		Excluding Sullivan County	Including Sullivan County		
					Excluding Sullivan County	Including Sullivan County				
Net tons										
Lump 2/ and Broken	57,396	22,231	45,041	....	124,668	124,668	....	....	....	124,668
Egg	605,396	945,550	1,620,295	....	3,171,241	3,171,241	....	....	....	3,171,241
Stove	1,787,483	3,146,182	6,092,375	10,085	11,026,040	11,036,125	142,005	142,005	....	11,178,130
Chestnut	1,993,451	4,177,310	6,716,715	11,071	12,887,476	12,898,547	360,324	373,959	....	13,272,506
Pea	758,193	1,514,317	1,443,212	6,566	3,715,722	3,722,288	134,733	138,364	605	3,861,257
Total domestic	5,201,919	9,805,590	15,917,638	27,722	30,925,147	30,952,869	637,062	654,328	605	31,607,802
Buckwheat No. 1	1,272,775	2,766,188	2,899,732	8,755	6,938,695	6,947,450	223,665	226,736	7,657	7,181,843
Buckwheat No. 2 (Rice)	854,857	1,569,313	1,458,663	16,086	3,882,833	3,898,919	187,835	189,170	40,319	4,128,408
Buckwheat No. 3 (Barley)	972,236	2,553,220	1,405,719	....	4,931,175	4,931,175	425,474	425,474	164,304	5,520,953
Buckwheat No. 4	308,085	1,246,366	466,326	....	2,020,777	2,020,777	1,018,237	1,018,237	276,515	3,315,529
Other (including silt)	686,496	456,227	220,799	715	1,363,522	1,364,237	592,576	592,576	397,239	2,354,052
Total steam	4,094,449	8,591,314	6,451,239	25,556	19,137,002	19,162,558	2,447,787	2,452,193	886,034	22,500,785
Grand total	9,296,368	18,396,904	22,368,877	53,278	50,062,149	50,115,427	3,084,849	3,106,521	886,639	54,108,587
Value										
Lump 2/ and Broken	$524,667	$209,534	$416,944	....	$1,151,145	$1,151,145	....	....	....	$1,151,145
Egg	5,644,521	8,966,133	15,124,045	....	29,734,699	29,734,699	....	....	....	29,734,699
Stove	16,837,837	29,957,468	56,848,821	$92,678	103,644,126	103,736,804	$1,277,716	$1,277,716	....	105,014,520
Chestnut	18,730,785	39,860,499	62,753,973	101,097	121,345,257	121,446,354	3,245,457	3,344,255	....	124,790,609
Pea	5,851,058	11,944,370	11,166,485	52,167	28,961,913	29,014,080	990,330	1,012,939	$3,647	30,030,666
Total domestic	47,588,868	90,938,004	146,310,268	245,942	284,837,140	285,083,082	5,513,503	5,634,910	3,647	290,721,639
Buckwheat No. 1	7,019,078	15,351,779	15,973,061	41,107	38,343,918	38,385,025	1,170,084	1,181,341	40,820	39,607,186
Buckwheat No. 2 (Rice)	3,847,605	7,126,069	6,593,939	42,124	17,567,613	17,609,737	771,668	772,986	108,355	18,491,078
Buckwheat No. 3 (Barley)	3,004,433	7,894,554	4,445,228	....	15,344,215	15,344,215	1,251,318	1,251,318	341,513	16,937,046
Buckwheat No. 4	695,041	2,662,840	860,974	....	4,218,855	4,218,855	2,121,111	2,121,111	480,615	6,820,581
Other (including silt)	1,337,934	836,867	411,017	1,251	2,585,818	2,587,069	1,082,527	1,082,527	661,278	4,330,874
Total steam	15,904,091	33,872,109	28,284,219	84,482	78,060,419	78,144,901	6,396,708	6,409,283	1,632,581	86,186,765
Grand total	63,492,959	124,810,113	174,594,487	330,424	362,897,559	363,227,983	11,910,211	12,044,193	1,636,228	376,908,404
Average value per ton										
Lump 2/ and Broken	$9.14	$9.43	$9.26	....	$9.23	$9.23	....	....	....	$9.23
Egg	9.32	9.48	9.33	....	9.38	9.38	....	....	....	9.38
Stove	9.42	9.52	9.33	$9.19	9.40	9.40	$9.00	$9.00	....	9.39
Chestnut	9.40	9.54	9.34	9.13	9.42	9.42	9.01	8.94	....	9.40
Pea	7.72	7.89	7.74	7.95	7.79	7.79	7.35	7.32	$6.03	7.78
Total domestic	9.15	9.27	9.19	8.87	9.21	9.21	8.65	8.61	6.03	9.20
Buckwheat No. 1	5.51	5.55	5.51	4.70	5.53	5.53	5.23	5.21	5.33	5.51
Buckwheat No. 2 (Rice)	4.50	4.54	4.52	2.62	4.52	4.52	4.11	4.09	2.69	4.48
Buckwheat No. 3 (Barley)	3.09	3.09	3.16	....	3.11	3.11	2.94	2.94	2.08	3.07
Buckwheat No. 4	2.26	2.14	1.85	....	2.09	2.09	2.08	2.08	1.74	2.06
Other (including silt)	1.95	1.83	1.86	1.75	1.90	1.90	1.83	1.83	1.66	1.84
Total steam	3.88	3.94	4.38	3.31	4.08	4.08	2.61	2.61	1.84	3.83
Grand total	6.83	6.78	7.81	6.20	7.25	7.25	3.86	3.88	1.85	6.97

1/ Figures of shipments from breakers include some culm-bank coal handled in breakers.

2/ Quantity of Lump included is insignificant.

TABLE 10.--Pennsylvania anthracite produced, 1942-46, by fields, in net tons

(The figures of breaker product include a certain quantity of culm-bank coal, which amounted to 5,311,791 tons in 1946)

Field	1942	1943	1944	1945	1946
Eastern Middle:					
Breakers	5,717,908	6,140,224	5,905,623	[1] 5,005,245	5,057,619
Washeries	259,378	356,450	403,688	[1] 342,116	282,481
Dredges	------	------	------	------	------
Total Eastern Middle	5,977,286	6,496,674	6,309,311	5,347,361	5,340,100
Western Middle:					
Breakers	13,122,774	12,577,769	12,721,704	11,540,524	13,040,147
Washeries	333,089	280,525	538,875	130,789	530,246
Dredges	466,339	442,608	385,137	308,976	362,423
Total Western Middle	13,922,202	13,300,902	13,645,716	11,980,289	13,932,816
Southern:					
Breakers	8,797,539	10,519,946	12,194,069	10,916,769	11,817,427
Washeries	1,326,087	1,486,803	2,091,473	1,373,578	1,386,125
Dredges	794,627	879,379	983,046	896,250	761,131
Total Southern	10,918,253	12,886,128	15,268,588	13,186,597	13,964,683
Northern:					
Breakers	29,269,471	[1] 27,417,425	27,794,639	[1] 23,503,306	26,227,918
Washeries	168,237	[1] 432,021	531,338	[1] 735,041	925,427
Dredges	24,067	12,750	4,554	------	8,840
Total Northern	29,461,775	27,862,196	28,330,531	24,238,347	27,162,185
Total, excluding Sullivan County:					
Breakers	56,907,692	[1] 56,655,364	58,616,035	[1] 50,965,844	56,143,111
Washeries	2,086,791	[1] 2,555,799	3,565,374	[1] 2,581,524	3,124,279
Dredges	1,285,033	1,334,737	1,372,737	1,205,226	1,132,394
Total	60,279,516	60,545,900	63,554,146	54,752,594	60,399,784
Sullivan County:					
Breakers	48,213	97,720	147,217	149,505	85,402
Washeries	------	------	------	31,810	21,687
Total Sullivan County	48,213	97,720	147,217	181,315	107,089
Grand total	60,327,729	60,643,620	63,701,363	54,933,909	60,506,873

[1] Small quantity of washery coal included with breaker.

TABLE 11. - Pennsylvania anthracite produced in 1946, classified as fresh-mined, culm-bank, and river coal, and as breaker, washery, and dredge product, by regions, in net tons

Region and type of plants	From mines			From culm banks	From river dredging	Total
	Underground		Strip pits			
	Mechanically loaded	Hand loaded				
Lehigh:						
Breakers	730,509	5,597,430	2,311,437	1,505,715	....	10,145,091
Washeries	....	....	....	369,875	....	369,875
Dredges	....	....	....	....	37,441	37,441
Total Lehigh	730,509	5,597,430	2,311,437	1,875,590	37,441	10,552,407
Schuylkill:						
Breakers	1,891,772	7,039,045	7,889,456	2,949,829	....	19,770,102
Washeries	....	12,115	14,550	1,802,312	....	1,828,977
Dredges	....	....	....	....	1,086,113	1,086,113
Total Schuylkill	1,891,772	7,051,160	7,904,006	4,752,141	1,086,113	22,685,192
Wyoming:						
Breakers	12,996,881	9,754,191	2,621,399	855,447	....	26,227,918
Washeries	....	....	....	925,427	....	925,427
Dredges	....	....	....	....	8,840	8,840
Total Wyoming	12,996,881	9,754,191	2,621,399	1,780,874	8,840	27,162,185
Total, excluding Sullivan County:						
Breakers	15,619,162	22,390,666	12,822,292	5,310,991	....	56,143,111
Washeries	....	12,115	14,550	3,097,614	....	3,124,279
Dredges	....	....	....	....	1,132,394	1,132,394
Total	15,619,162	22,402,781	12,836,842	8,408,605	1,132,394	60,399,784
Sullivan County:						
Breakers	....	62,514	22,088	800	....	85,402
Washeries	....	....	....	21,687	....	21,687
Total Sullivan County	....	62,514	22,088	22,487	....	107,089
Grand total	15,619,162	22,465,295	12,858,930	8,431,092	1,132,394	60,506,873

TABLE 12. - Pennsylvania anthracite produced in 1946, classified as fresh-mined, culm-bank, and river coal, and as breaker, washery, and dredge product, by fields, in net tons

Field and type of plants	From mines			From culm banks	From river dredging	Total
	Underground		Strip pits			
	Mechanically loaded	Hand loaded				
Eastern Middle:						
Breakers	730,509	2,474,572	1,144,526	708,012	....	5,057,619
Washeries	....	....	....	282,481	....	282,481
Total Eastern Middle	730,509	2,474,572	1,144,526	990,493	....	5,340,100
Western Middle:						
Breakers	1,521,472	5,382,582	4,233,724	1,902,369	....	13,040,147
Washeries	....	....	10,187	520,059	....	530,246
Dredges	....	....	....	....	362,423	362,423
Total Western Middle	1,521,472	5,382,582	4,243,911	2,422,428	362,423	13,932,816
Southern:						
Breakers	370,300	4,779,321	4,822,643	1,845,163	....	11,817,427
Washeries	....	12,115	4,363	1,369,647	....	1,386,125
Dredges	....	....	....	....	761,131	761,131
Total Southern	370,300	4,791,436	4,827,006	3,214,810	761,131	13,964,683
Northern:						
Breakers	12,996,881	9,754,191	2,621,399	855,447	....	26,227,918
Washeries	....	....	....	925,427	....	925,427
Dredges	....	....	....	....	8,840	8,840
Total Northern	12,996,881	9,754,191	2,621,399	1,780,874	8,840	27,162,185
Total, excluding Sullivan County:						
Breakers	15,619,162	22,390,666	12,822,292	5,310,991	....	56,143,111
Washeries	....	12,115	14,550	3,097,614	....	3,124,279
Dredges	....	....	....	....	1,132,394	1,132,394
Total	15,619,162	22,402,781	12,836,842	8,408,605	1,132,394	60,399,784
Sullivan County:						
Breakers	....	62,514	22,088	800	....	85,402
Washeries	....	....	....	21,687	....	21,687
Total Sullivan County	....	62,514	22,088	22,487	....	107,089
Grand total	15,619,162	22,465,295	12,858,930	8,431,092	1,132,394	60,506,373

TABLE 13. - Pennsylvania anthracite shipped, sold locally, and used as colliery fuel in 1946, by regions

Region	Shipments		Local sales		Colliery fuel		Total	
	Net tons	Value 1/	Net tons	Value	Net tons	Value	Net tons	Value 1/
Lehigh:								
Breakers	9,296,368	$63,492,959	558,991	$4,631,136	289,732	$1,222,600	10,145,091	$69,346,695
Washeries	349,543	1,483,468	19,582	133,855	750	2,760	369,875	1,620,083
Dredges	37,441	66,311	....	....	....	....	37,441	66,311
Total Lehigh	9,683,352	65,042,738	578,573	4,764,991	290,482	1,225,360	10,552,407	71,033,089
Schuylkill:								
Breakers	18,396,904	124,810,113	1,120,708	8,369,373	252,490	589,511	19,770,102	133,768,997
Washeries	1,826,036	7,642,475	1,509	6,921	1,432	3,430	1,828,977	7,652,826
Dredges	840,358	1,552,237	240,457	445,064	5,298	10,032	1,086,113	2,007,333
Total Schuylkill	21,063,298	134,004,825	1,362,674	8,821,358	259,220	602,973	22,685,192	143,429,156
Wyoming:								
Breakers	22,368,877	174,594,487	2,455,668	17,684,004	1,403,373	3,172,709	26,227,918	195,451,200
Washeries	909,270	2,784,268	7,032	13,927	9,125	16,897	925,427	2,815,092
Dredges	8,840	17,680	....	....	....	....	8,840	17,680
Total Wyoming	23,286,987	177,396,435	2,462,700	17,697,931	1,412,498	3,189,606	27,162,185	198,283,972
Total, excluding Sullivan County:								
Breakers	50,062,149	362,897,559	4,135,367	30,684,513	1,945,595	4,984,820	56,143,111	398,566,892
Washeries	3,084,849	11,910,211	28,123	154,703	11,307	23,087	3,124,279	12,088,001
Dredges	886,639	1,636,228	240,457	445,064	5,298	10,032	1,132,394	2,091,324
Total	54,033,637	376,443,998	4,403,947	31,284,280	1,962,200	5,017,939	60,399,784	412,746,217
Sullivan County: 2/								
Breakers	53,278	330,424	31,574	203,175	550	3,177	85,402	536,776
Washeries	21,672	133,982	15	95	....	....	21,687	134,077
Total Sullivan County	74,950	464,406	31,589	203,270	550	3,177	107,089	670,853
Grand total: 1946	54,108,587	376,908,404	4,435,536	31,487,550	1,962,750	5,021,116	60,506,873	413,417,070
1945	48,542,451	293,921,884	4,273,864	25,639,359	2,117,594	4,383,192	54,933,909	323,944,435
Change, 1946 - percent	+11.5	+28.2	+3.8	+22.8	-7.3	+14.6	+10.1	+27.6

1/ Value given for shipments is value at which coal left possession of producing company and does not include margins of separately incorporated sales companies.

2/ For purposes of historical comparison and statistical convenience, the mines of Sullivan County are grouped with the Pennsylvania anthracite region, although the product is classified as semianthracite according to the American Society for Testing Materials Tentative Standard.

Table 14 Culm-bank coal put through breakers, 1942-46, by fields, in net tons

Year	Northern	Eastern Middle	Western Middle	Southern	Total
1942	291,136	420,150	1,413,398	523,589	2,648,273
1943	1/2/ 629,713	1,087,648	2,102,124	1,208,414	1/ 5,027,399
1944	2/ 1,156,489	743,867	2,528,221	1,699,875	6,128,452
1945	1/2/ 996,037	1/ 698,876	2,335,200	2,206,187	1/ 6,236,300
1946	2/ 856,247	708,012	1,902,369	1,845,163	5,311,791

1/ Includes some washery coal.
2/ A small quantity of culm-bank coal was put through breakers in Sullivan County.

TABLE 15.--Sizes of Pennsylvania anthracite shipped from breakers, 1944-46, by regions, in percent of total

(Note that shipments of dredge and washery coal are not included)

Size	Percent of total shipments								
	Lehigh region			Schuylkill region			Wyoming region		
	1944	1945	1946	1944	1945	1946	1944	1945	1946
Lump 1/ and Broken	0.5	0.6	0.6	0.1	0.1	0.1	0.5	0.2	0.2
Egg	6.0	5.8	6.5	6.2	5.9	5.2	8.3	7.4	7.3
Stove	19.2	19.3	19.2	17.0	16.1	17.1	26.9	27.6	27.2
Chestnut	22.1	22.1	21.5	21.8	21.8	22.7	29.1	30.2	30.0
Pea	9.3	8.9	8.2	9.3	8.9	8.2	6.9	6.3	6.5
Total domestic	57.1	56.7	56.0	54.4	52.8	53.3	71.7	71.7	71.2
Buckwheat No. 1	14.3	13.6	13.7	15.4	15.4	15.0	13.3	13.3	12.9
Buckwheat No. 2 (Rice)	9.6	9.2	9.2	10.0	9.5	8.5	6.8	6.4	6.5
Buckwheat No. 3 (Barley)	11.1	9.9	10.4	13.4	14.3	13.9	6.4	6.4	6.3
Buckwheat No. 4	2.5	3.5	3.3	5.7	6.5	6.8	1.3	1.4	2.1
Other (including silt)	5.4	7.1	7.4	1.1	1.5	2.5	0.5	0.8	1.0
Total steam	42.9	43.3	44.0	45.6	47.2	46.7	28.3	28.3	28.8

Size	Sullivan County			Total					
				Excluding Sullivan County			Including Sullivan County		
Lump 1/ and Broken	------	------	------	0.4	0.3	0.3	0.3	0.3	0.3
Egg	------	------	------	7.1	6.5	6.3	7.1	6.5	6.3
Stove	14.5	25.3	18.9	21.9	21.7	22.0	21.9	21.7	22.0
Chestnut	26.4	28.4	20.8	25.2	25.5	25.8	25.2	25.5	25.8
Pea	22.1	12.7	12.3	8.2	7.8	7.4	8.3	7.8	7.4
Total domestic	63.0	66.4	52.0	62.8	61.8	61.8	62.8	61.8	61.8
Buckwheat No. 1	12.5	13.0	16.4	14.3	14.1	13.9	14.2	14.1	13.9
Buckwheat No. 2 (Rice)	1.6	2.3	30.2	8.5	8.1	7.8	8.5	8.1	7.8
Buckwheat No. 3 (Barley)	------	------	------	9.7	10.0	9.8	9.7	9.9	9.8
Buckwheat No. 4	22.9	------	------	3.0	3.6	4.0	3.1	3.6	4.0
Other (including silt)	------	18.3	1.4	1.7	2.4	2.7	1.7	2.5	2.7
Total steam	37.0	33.6	48.0	37.2	38.2	38.2	37.2	38.2	38.2

1/ Quantity of Lump included is insignificant.

TABLE 16.--Average sales realization per net ton on Pennsylvania anthracite shipments from breakers, 1944-46, by regions and sizes

(Value does not include margins of separately incorporated sales companies)

Size	Lehigh region			Schuylkill region			Wyoming region		
	1944	1945	1946	1944	1945	1946	1944	1945	1946
Lump 1/ and Broken------	$7.40	$7.98	$9.14	$7.67	$8.17	$9.43	$7.46	$8.00	$9.26
Egg-------------------	7.58	8.10	9.32	7.58	8.18	9.48	7.54	8.11	9.33
Stove------------------	7.61	8.11	9.42	7.62	8.18	9.52	7.54	8.07	9.33
Chestnut---------------	7.61	8.09	9.40	7.64	8.20	9.54	7.54	8.09	9.34
Pea--------------------	6.16	6.56	7.72	6.16	6.66	7.89	6.02	6.60	7.74
Total domestic--------	7.37	7.86	9.15	7.37	7.93	9.27	7.39	7.95	9.19
Buckwheat No. 1---------	4.54	4.76	5.51	4.52	4.80	5.55	4.52	4.79	5.51
Buckwheat No. 2 (Rice)--	3.65	3.87	4.50	3.51	3.89	4.54	3.65	3.95	4.52
Buckwheat No. 3 (Barley)	2.55	2.67	3.09	2.45	2.61	3.09	2.65	2.72	3.16
Buckwheat No. 4---------	1.94	2.02	2.26	1.77	1.81	2.14	1.87	1.82	1.85
Other (including silt)--	1.43	1.62	1.95	1.23	1.48	1.83	1.45	1.48	1.86
Total steam-----------	3.29	3.36	3.88	3.27	3.43	3.94	3.71	3.89	4.38
Total all sizes-------	5.62	5.91	6.83	5.50	5.81	6.78	6.35	6.80	7.81

Size	Sullivan County			Total					
				Excluding Sullivan County			Including Sullivan County		
Lump 1/ and Broken------	------	------	------	$7.47	$8.02	$9.23	$7.47	$8.02	$9.23
Egg-------------------	------	------	------	7.56	8.13	9.38	7.56	8.13	9.38
Stove------------------	$6.91	$7.41	$9.19	7.58	8.11	9.40	7.57	8.10	9.40
Chestnut---------------	6.83	7.53	9.13	7.58	8.12	9.42	7.58	8.12	9.42
Pea--------------------	6.00	6.40	7.95	6.11	6.62	7.79	6.11	6.62	7.79
Total domestic--------	6.56	7.27	8.87	7.38	7.93	9.21	7.38	7.93	9.21
Buckwheat No. 1---------	4.01	4.08	4.70	4.52	4.79	5.53	4.52	4.79	5.53
Buckwheat No. 2 (Rice)--	2.03	2.55	2.62	3.59	3.91	4.52	3.59	3.91	4.52
Buckwheat No. 3 (Barley)	------	------	------	2.53	2.65	3.11	2.53	2.65	3.11
Buckwheat No. 4---------	2.05	------	------	1.82	1.85	2.09	1.82	1.85	2.09
Other (including silt)--	------	2.27	1.75	1.39	1.57	1.90	1.39	1.58	1.90
Total steam-----------	2.71	2.99	3.31	3.42	3.56	4.08	3.42	3.56	4.08
Total all sizes-------	5.13	5.83	6.20	5.91	6.26	7.25	5.91	6.26	7.25

1/ Quantity of Lump included is insignificant.

TABLE 17.--Average value per ton of Pennsylvania anthracite shipments, local sales, colliery fuel, and total production, 1945-46, by regions 1/

(Note that values in this table include washery and dredge coal)

Region	1945				1946			
	Shipments	Local sales	Colliery fuel	Total production	Shipments	Local sales	Colliery fuel	Total production
Lehigh------------------	$5.84	$7.06	$3.15	$5.83	$6.72	$8.24	$4.22	$6.73
Schuylkill--------------	5.52	4.74	2.14	5.42	6.36	6.47	2.33	6.32
Wyoming-----------------	6.65	6.41	1.85	6.33	7.62	7.19	2.26	7.30
Total, excluding Sullivan County-----	6.06	6.00	2.07	5.90	6.97	7.10	2.56	6.83
Sullivan County---------	5.56	5.90	2.92	5.63	6.20	6.43	5.78	6.26
Grand total-----------	6.05	6.00	2.07	5.90	6.97	7.10	2.56	6.83

1/ Value given for shipments is value at which coal left possession of producing company and does not include margins of separately incorporated sales companies.

TABLE 18.--Pennsylvania anthracite handled by mobile loaders and scrapers and by all types of conveyors in 1946, by fields, in net tons

Field	Scraper loaders 1/	Pit-car loaders	Hand-loaded face conveyors, all types 2/	Total mechanically loaded underground
Northern----------------	2,237,897	342,583	10,416,401	12,996,881
Eastern Middle-----------	149,948	68,357	512,204	730,509
Western Middle-----------	398,916	30,039	1,092,517	1,521,472
Southern-----------------	8,835	17,367	344,098	370,300
Total--------------------	2,795,596	458,346	12,365,220	15,619,162

1/ Includes mobile loaders.
2/ Shaker chutes, etc., including those equipped with duckbills.

TABLE 19. - Pennsylvania anthracite loaded mechanically underground, 1943-46

Year	Scrapers		Mobile loaders		Conveyors and pit-car loaders 1/		Total loaded mechanically	
	Number of units	Net tons loaded	Number of units	Net tons loaded	Number of units	Net tons loaded	Number of units	Net tons loaded
1943 ...	510	2,750,256	5	57,033	2,701	11,938,504	3,216	14,745,793
1944 ...	491	2,811,824	12	69,837	2,807	12,093,485	3,310	14,975,146
1945 ...	548	2,747,254	20	146,209	3,006	11,034,492	3,574	13,927,955
1946 ...	564	2,714,051	27	81,545	3,233	12,823,566	3,824	15,619,162

1/ Includes duckbills and other self-loading conveyors.

TABLE 20.--Relative growth of mechanical loading, hand loading, and stripping in Pennsylvania anthracite mines, 1942-46

(Mechanical loading includes coal handled on pit-car loaders and hand-loaded face conveyors)

Year	Net tons			Index numbers: 1927=100		
	Mechanical loading underground	Stripping	Hand loading	Mechanical loading underground	Stripping	Hand loading
1942----------------------	14,741,459	9,070,933	30,495,240	663	421	43
1943----------------------	14,745,793	8,989,387	27,990,005	663	417	39
1944----------------------	14,975,146	10,953,030	26,800,270	674	509	38
1945----------------------	13,927,955	10,056,325	20,957,744	626	467	29
1946----------------------	15,619,162	12,858,930	22,465,295	703	597	31

TABLE 21. - Pennsylvania anthracite produced by dredges in 1946, by rivers

River (including tributaries)	Net tons	Value	
		Total	Average
Lehigh ----------------------------	37,441	$66,311	$1.77
Schuylkill ------------------------	247,757	413,105	1.67
Susquehanna -----------------------	847,196	1,611,908	1.90
	1,132,394	2,091,324	1.85

TABLE 22. - Power shovels and draglines used in stripping Pennsylvania anthracite, by type of power, 1944-46

Type of power	1944			1945			1946		
	Number of power shovels	Number of draglines	Total	Number of power shovels	Number of draglines	Total	Number of power shovels	Number of draglines	Total
Gasoline ...	39	24	63	38	21	59	68	20	88
Electric ...	24	36	60	29	38	67	33	44	77
Diesel	72	178	250	89	202	291	155	254	409
All other ..	4	....	4	4	....	4	6	....	6
	139	238	377	160	261	421	262	318	580

TABLE 23.--Relative growth of Pennsylvania anthracite mined from strip pits, 1915, 1920, 1925, 1930, and 1943-46

	Net tons mined by stripping	Percent of fresh-mined total that was stripped	Number of men employed	Average number of days worked
1915----------------------------------	1,121,603	(1)	(1)	(1)
1920----------------------------------	2,054,441	2.5	(1)	(1)
1925----------------------------------	1,578,478	2.7	(1)	(1)
1930----------------------------------	2,536,288	3.7	(1)	(1)
1943----------------------------------	8,989,387	17.4	5,084	229
1944----------------------------------	10,953,030	20.8	5,595	246
1945----------------------------------	10,056,325	22.4	5,314	238
1946:				
Lehigh region-------------------------	2,311,437	26.8	1,432	258
Schuylkill region---------------------	7,904,006	46.9	3,671	256
Wyoming region------------------------	2,621,399	10.3	1,031	233
Total, excluding Sullivan County--------	12,836,842	25.2	6,134	253
Sullivan County-----------------------	22,088	26.1	18	97
Grand total, 1946---------------------	12,858,930	25.2	6,152	252

1/ Data not available.

TABLE 24.--Pennsylvania anthracite cut by machines, 1945-46, by regions

Region	1945			1946		
	Cutting machines		Net tons cut by machines	Cutting machines		Net tons cut by machines
	Permissible	All other types		Permissible	All other types	
Lehigh------------------------------	--------	--------	--------	--------	--------	--------
Schuylkill--------------------------	--------	--------	--------	--------	--------	--------
Wyoming-----------------------------	189	36	1,210,171	177	23	1,232,828
Total, excluding Sullivan County----	189	36	1,210,171	177	23	1,232,828
Sullivan County---------------------	--------	--------	--------	--------	--------	--------
Grand total-------------------------	189	36	1,210,171	177	23	1,232,828

TABLE 25. - Men employed and days worked at operations producing Pennsylvania anthracite in 1946, by regions 1/
[Includes operations of strip contractors]

25453

Region	Average number of men employed								Average number of days plant operated	Man-days of labor	Average tons per man per day
	Underground			Surface				Grand total			
	Miners and their laborers	Other	Total under-ground	In strip pits	In preparation plant	Other	Total surface				
Lehigh:											
Breaker	4,921	3,811	8,732	1,432	978	2,777	5,187	13,919	264	3,671,228	2.76
Washery 2/	......	......	......	.....	105	105	210	210	246	51,729	7.15
Dredge	......	......	......	.....	4	9	13	13	219	2,841	13.18
Total Lehigh	4,921	3,811	8,732	1,432	1,087	2,891	5,410	14,142	263	3,725,798	2.83
Schuylkill:											
Breaker	7,088	5,213	12,301	3,663	2,049	3,830	9,542	21,843	261	5,709,352	3/3.40
Washery 2/	......	......	......	8	138	783	929	929	233	216,240	8.46
Dredge	......	......	......	.....	233	281	514	514	256	131,809	8.24
Total Schuylkill	7,088	5,213	12,301	3,671	2,420	4,894	10,985	23,286	260	6,057,401	3/3.69
Wyoming:											
Breaker	20,299	10,575	30,874	1,031	1,996	6,354	9,381	40,255	281	11,330,043	2.31
Washery 2/	......	......	......	.....	96	184	280	280	206	57,790	16.01
Dredge	......	......	......	.....	8	6	14	14	104	1,456	6.07
Total Wyoming	20,299	10,575	30,874	1,031	2,100	6,544	9,675	40,549	281	11,389,289	2.38
Total, excluding Sullivan County:											
Breaker	32,308	19,599	51,907	6,126	5,023	12,961	24,110	76,017	272	20,710,623	3/2.69
Washery 2/	......	......	......	8	339	1,072	1,419	1,419	230	325,759	9.59
Dredge	......	......	......	.....	245	296	541	541	252	136,106	8.32
Total	32,308	19,599	51,907	6,134	5,607	14,329	26,070	77,977	272	21,172,488	3/2.84
Sullivan County	70	19	89	18	47	14	79	168	204	34,198	3.13
Grand total	32,378	19,618	51,996	6,152	5,654	14,343	26,149	78,145	271	21,206,686	3/2.84

1/ Men employed in "bootleg" operations excluded.

2/ Represents washeries for which both production and employment were separately reported.

3/ Output per man per day calculated on legitimate tonnages only; "bootleg" purchases excluded.

TABLE 26.--Men employed at operations producing Pennsylvania anthracite, 1945-46, by counties

(Includes operations of strip contractors)

County	1945	1946	County	1945	1946
Berks, Lancaster, Lebanon, Northampton, and Snyder 1/	104	129	Northumberland	5,572	5,805
Carbon	4,907	5,284	Schuylkill	16,910	18,245
Columbia	1,897	2,015	Sullivan	203	168
Dauphin	327	361	Susquehanna and Wayne	57	62
Lackawanna	11,358	12,012			
Luzerne	31,507	34,064	Total	72,842	78,145

1/ Counties producing dredge coal only.

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MINERAL MARKET REPORT, NO. MMS 1546.

SALES OF LIQUEFIED PETROLEUM GASES INCREASE A THIRD IN 1946

Domestic deliveries of liquefied petroleum gases sold for fuel, chemical raw material and synthetic rubber components increased from 1,276,766,000 gallons in 1945 to 1,705,282,000 in 1946 - a gain of 34 percent compared with an expansion of 20 percent in 1945 over 1944. It is believed that the volume of domestic sales in 1946 would have been even greater had more pressure tank cars and trucks been available for distribution purposes and had additional equipment for the use of these liquid gases been more readily obtainable. Exports of liquefied petroleum gases increased from 26,059,000 gallons in 1945 to 49,091,000 in 1946 - a gain of 88 percent, according to the Bureau of the Census, United States Department of Commerce. The outstanding growth of this trade in 1946 compares with an increment of 79 percent in 1945 over 1944.

Table 1.- Sales of liquefied petroleum gases in the United States, 1940-46
(Thousands of gallons)

Year	Butane	Propane	Butane-propane mixtures	Pentane	Quantity	Total percentage increase over previous year
1940..........	77,056	109,216	123,348	3,836	313,456	40.2
1941..........	112,244	126,969	219,252	4,387	462,852	47.7
1942..........	128,560	150,511	301,917	4,452	585,440	26.5
1943..........	140,122	218,273	312,683	4,155	675,233	15.3
1944[1].........	122,870	324,355	450,846	(4)	898,071	33.0
1944[2].........	273,116	335,884	451,156	(4)	1,060,156	-
1945..........	325,140	444,581	507,045	(4)	1,276,766	20.4
1946[3].........	438,439	548,827	718,016	(4)	1,705,282	33.6

1/ Without synthetic rubber components for comparison with 1943. 2/ Includes material delivered for synthetic rubber components. 3/ Subject to revision. 4/ Not available.

The totals for the different uses of liquefied petroleum gases rose sharply in 1946, except that for internal-combustion-engine fuel, which showed only a small gain and the quantity for industrial fuel which dropped slightly. Sales of liquefied petroleum gases for domestic or household fuel have more than doubled since 1943 and the 1946 total of 766,150,000 gallons was 44 percent over the 1945 demand of 533,262,000 and this expansion compares with gains of 20 percent in 1945 and 29 percent in 1944. Deliveries of liquefied petroleum gases for domestic fuel made up 45 percent of the total for all uses in 1946, a slightly larger proportion than the 42 percent reported for both 1944 and 1945. The purchases of liquefied petroleum gases by manufactured-gas companies have mounted steadily in recent years and the volume reported for 1946 - 86,660,000 gallons - was 61 percent over the 1945 quantity of 53,849,000 and nearly double the 1944 total. Sales of liquefied petroleum gases credited to manufactured-gas companies represented 5 percent of all deliveries in 1946 in contrast to 4 percent of the total for both 1944 and 1945.

Prepared by A. T. Coumbe, Petroleum Economics Division, Economics and Statistics Branch.

Over a third of all sales of liquefied petroleum gases were sold for non-fuel uses in 1946. The quantity reported for synthetic rubber components increased from 208,787,000 gallons in 1945 to 289,442,000 in 1946, a 39-percent gain, while in addition the total indicated for chemical raw material of 307,655,000 gallons was 37 percent above the 1945 demand of 224,291,000 gallons and more than double 1944 requirements. It is believed that the demand for liquefied petroleum gases for use in the manufacture of synthetic rubber probably reached a "peak" volume in 1946, as the output of synthetic rubber is being curtailed as more natural rubber becomes available. It should be added, however, that the greater shrinkage in the demand for raw material going into synthetic rubber has been in the alcohols from agriculture sources because of their higher cost rather than in liquefied gases derived from petroleum and natural gas. The liquefied petroleum gases reported for chemical raw material in 1946 are believed to be below the actual demand by chemical plants as some of the other hydrocarbons such as ethane, pentane, hexane and heptane, are not included, and furthermore, it is also believed that some companies did not report all material moved to chemical plants by pipe lines.

The volume of sales of liquefied petroleum gases for internal-combustion-engine fuel has expanded very little in recent years, due both to wartime regulations and equipment shortages, and the 1946 quantity of 96,222,000 gallons is only 3 percent above the 1945 total of 93,340,000 gallons. Furthermore, the liquefied petroleum gases sold for motor fuel have declined from a 9-percent proportion of total deliveries for all uses in 1944 to a 7-percent share in 1945 and a 6-percent share in 1946. The use of liquefied petroleum gases for industrial fuel declined from 163,121,000 gallons in 1945 to 159,115,000 in 1946, a 3-percent shrinkage compared with a slight gain in 1945 over 1944. This lack of growth in the use of liquefied petroleum gases as an industrial fuel in recent years is largely the result of equipment shortages for its handling and use. Diversion of supplies for competitive uses, especially for chemical raw material, was probably also a factor.

The proportion of butane in the total sales of liquefied petroleum gases has remained just below 26 percent in recent years, while some slight variations are noted in the shares for propane and butane-propane mixtures. The percentage for propane rose from 32 percent of total deliveries in 1944 to about 35 percent in 1945, but again dropped to slightly over 32 percent of the total in 1946. Butane-propane mixtures as reported declined from nearly 43 percent of total sales of liquefied petroleum gases in 1944 to 40 percent in 1945 and then turned upwards to a 42-percent share of all deliveries in 1946.

Butane sold as liquefied petroleum gas increased from 325,140,000 gallons in 1945 to 438,439,000 in 1946 - a gain of 35 percent compared with a 19-percent expansion in 1945 over 1944. All uses of butane showed gains in 1946 except quantities delivered for domestic and internal-combustion-engine fuels. Over 60 percent of the total butane was reported as sold for synthetic rubber components in 1946 and the quantity of 268,946,000 gallons was 48 percent over the 1945 demand of 181,857,000 gallons. The use of butane in chemical manufacturing rose by 75 percent from 26,227,000 gallons in 1945 to 45,959,000 in 1946, however, the volume of this demand is not relatively important at the present time.

Butane delivered for domestic or household fuel has fluctuated from 27,565,000 gallons in 1944 to 52,866,000 in 1945 and then down by 14 percent to 45,285,000 gallons in 1946. The increasing pressure for butane as raw material used in the manufacture of motor fuel, synthetic rubber and chemical products has apparently forced distributors to turn more to propane and butane-propane mixtures to satisfy the domestic fuel demand. The use of butane as industrial fuel rose from 42,043,000 gallons in 1945 to 48,100,000 in 1946 - a 14-percent gain, however, the total is still below quantities reported during the war years.

Sales of butane to manufactured-gas companies increased noticeably from 15,637,000 gallons in 1945 to 25,682,000 in 1946 - a 64-percent gain. The expansion in this demand in 1946 compares with a 5-percent increment in 1945 and a shrinkage by a third in 1944. A small quantity of butane is reported as fuel for internal-combustion engines and the total has declined sharply from a peak demand of 18,799,000 gallons in 1941 to 4,467,000 in 1946, due to wartime restrictions, lack of equipment and competitive demands for this liquid gas.

Reported deliveries of propane of 548,827,000 gallons in 1946 were 23 percent over the 1945 demand of 444,581,000 gallons. Most of the propane is sold for domestic or household fuel and this demand increased by 44 percent from 216,415,000 gallons in 1945 to 312,240,000 in 1946. A fairly important quantity of propane is also used as industrial fuel, however the total declined from 105,040,000 gallons in 1945 to 91,033,000 in 1946, as this class of consumers used more butane and butane-propane mixtures to satisfy their requirements.

Manufactured-gas companies are using rapidly increasing quantities of liquefied petroleum gases in their operations and nearly half of their requirements are for propane, the total of which nearly doubled from 22,323,000 gallons in 1945 to 41,199,000 in 1946. Very little propane is used as fuel in internal-combustion engines, however, the quantity is gradually increasing and the 1946 total of 8,297,000 gallons was 11 percent over the 1945 item of 7,453,000 gallons.

The non-fuel uses of propane are not relatively important up to the present time, however quantities consumed as chemical raw material have jumped from less than 5,000,000 gallons in 1943 to 66,776,000 in 1945 and 76,412,000 in 1946, while propane going to synthetic rubber plants has fluctuated from 11,529,000 gallons in 1944 to 26,526,000 in 1945 and then down to 19,631,000 gallons in 1946.

Butane-propane mixtures reported in the survey increased from 507,045,000 gallons in 1945 to 718,016,000 in 1946 - a 42-percent gain or a greater expansion in volume than that shown for either butane or propane. Most of these "mistures" were delivered for domestic fuel and this use increased by 55 percent from 263,981,000 gallons in 1945 to 408,625,000 in 1946. Important quantities of butane-propane mixtures are also used as raw material for the manufacture of chemicals and the volume of this demand has expanded greatly from less than 40,000,000 gallons in 1943 to 131,288,000 in 1945 and 185,284,000 in 1946. Liquefied petroleum gases consumed as motor fuel are predominantly butane-propane mixtures. This particular demand showed a small decline in 1945 to 79,418,000 gallons; however, the 1946 quantity of 83,458,000 represents a new "peak" in the use of butane-propane mixtures as a motor fuel.

About 3 percent of the butane-propane mixtures sold is credited to manufactured-gas companies and this demand has steadily increased in recent years to 19,779,000 gallons in 1946 - a 25 percent gain over the 1945 total of 15,889,000 gallons. A similar proportion of "mixtures" is also used at present as fuel by industrial plants and the 1946 quantity of 19,982,000 gallons compares with 16,038,000 under this classification in 1945. It should be added that much larger amounts (43,011,000 gallons in 1942) of butane-propane mixtures were formerly used as industrial fuel; however, lately there has been a shift to propane as competitive demands - domestic fuel and chemical raw material - have absorbed the supply. Butane-propane mixtures reported as synthetic rubber components are of minor importance in volume; however, the total increased from 404,000 gallons in 1945 to 865,000 in 1946.

The relative proportions of the different liquefied petroleum gases sold to satisfy the several uses have changed in recent years as competitive demands, especially for butane and "mixtures", have developed. If butane sold for synthetic rubber components is omitted, in order to put the more recent sales of liquefied petroleum gases on a comparative basis with those prior to 1944, we find that butane in the annual deliveries has dropped steadily from a 24-percent share in 1941 to a 12-percent proportion in 1946 and that the part of the total demand satisfied by propane has increased almost correspondingly from 27 percent in 1941 to 37 percent in 1946. In other words there has been a pronounced shift from butane to propane in sales of liquefied petroleum gases, if quantities diverted for synthetic rubber are not taken into consideration. The percentage for butane-propane mixtures in the total annual sales of liquefied petroleum gases has fluctuated slightly in recent years but has averaged about 50 percent of all deliveries. When material delivered for synthetic rubber components are included for the years 1944 through 1946 we find that the proportion of butane has remained almost constant at about 26 percent of the total, while that for propane rose from 32 percent in 1944 to 35 percent in 1945 and then down to 32 percent of all sales of liquefied petroleum gases in 1946. The butane-propane mixtures in the total have varied from about 43 percent in 1944 to 40 percent in 1945 and then up to a 42-percent share in 1946.

If the proportions for the different liquefied petroleum gases sold to satisfy the different uses are reviewed, it is found that butane made up about 6 percent of the total for domestic or household uses in 1946 against a 10-percent share in 1945 and 6 percent in 1944. The propane in the domestic item was 38 percent in 1944 and 41 percent for both 1945 and 1946, while butane-propane mixtures have varied from 56 percent of the total in 1944 to 50 percent in 1945 and then up to 53 percent of domestic fuel requirements in 1946. The manufactured-gas industry is taking relatively more propane and less of both butane and butane-propane mixtures in recent years. The proportion of propane in their requirements has advanced from 37 percent in 1944 to nearly 48 percent in 1946, while the percentage of butane in deliveries of liquefied petroleum gases to this same industry has declined from about 33 percent in 1944 to less than 30 percent in 1946. The proportion of butane-propane mixtures diverted to manufactured-gas companies has declined from 30 percent of total purchases in 1944 to about 23 percent in 1946.

Relatively more butane-propane mixtures and less butane have been reported as industrial fuel in recent years, while the percentage proportion of propane in the total has fluctuated rather widely. The butane share in the liquefied petroleum gases sold for industrial fuel dropped from 33 percent of the 1944 item to 26 percent in 1945 and then up to 30 percent in 1946. The proportion for butane-propane mixtures rose from 10 percent for both 1944 and 1945 to nearly 13 percent in 1946, while the propane share of total industrial fuel requirements has varied from 57 percent in 1944 then up to 64 percent of the total in 1945, then a drop to 57 percent in 1946, as the relative proportions for both butane and "mixtures" showed increases.

Chemical plants use relatively more butane-propane mixtures than either butane or propane as raw material. Butane-propane mixtures reported in their purchases of liquefied petroleum gases have expanded from 58 percent of the total in 1944 to over 60 percent in 1946, while the proportion for butane in the same period has varied from 12 to 15 percent and that for propane has ranged from 25 to about 30 percent of the total. Liquefied petroleum gases used as synthetic rubber components are predominantly butane, and the proportion in the total requirements has ranged from 93 percent in 1944 to 87 percent in 1945 and then again to 93 percent in 1946. Propane made up the balance of the liquefied petroleum gases sold to synthetic rubber plants except for very small amounts of "mixtures".

Mixtures of butane-propane are generally sold to be used as fuel in internal-combustion engines, and these "mixtures" have made up from 85 to 89 percent of the total for this particular demand in recent years. The proportion of butane consumed directly as motor fuel has varied from 4 to 7 percent of total requirements in the 1944-1946 period, while that for propane has increased from 7 percent to about 9 percent in the same interval.

The American Gas Association is credited with the following statistics regarding the distribution of liquefied petroleum gases by manufactured-gas companies:

> "Liquefied petroleum gas, as of May 1947, was being delivered through mains to 187,000 consumers in 306 communities by 157 companies in 36 states.
>
> "Butane-air gas and propane-air gas with heating value ranging from 520 to 1,600 B.t.u. per cu. ft. was supplied to 238 communities in 35 states.
>
> " A mixture of undiluted butane and propane gas with heating value of 2,800 to 3,000 B.t.u. per cu. ft. was supplied 17 communities in Arizona, California, and New Mexico.
>
> "Undiluted propane gas with heating value of 2,515 to 2,575 B.t.u. per cu. ft. was supplied 51 communities in Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, North Carolina, North Dakota, Virginia, and Wisconsin."

A survey covering sales of liquefied petroleum gases in the Pacific Coast marketing area (California, Oregon, Washington, Arizona, and Nevada) made by E. T. Knudsen of the Los Angeles office of the Bureau of Mines shows deliveries of 241,116,000 gallons in 1946 - a gain of 29 percent over the 1945 quantity of 187,211,000 gallons. The liquefied petroleum gases marketed on the Pacific Coast made up about 14 percent of the national total in 1946 compared with a 15-percent share in 1945. Distributors operating in all other parts of the country sold 1,464,166,000 gallons of liquefied petroleum gases in 1946 or 34 percent over the 1945 volume of 1,089,555,000 gallons.

Records of the Bureau of the Census, United States Department of Commerce, show exports of liquefied petroleum gases of 49,091,000 gallons in 1946 - a gain of 88 percent of the 1945 total of 26,059,000 gallons. Most of these shipments were credited to Canada and Mexico for both years, although France is shown to have received an initial item of 1,941,000 gallons in 1946.

Table II - Sales 1/ of liquefied petroleum gases by uses and regional distribution, 1945-46
(Thousands of gallons)

	BUTANE				PROPANE			
	1946 2/		1945		1946 2/		1945	
	Total	Percent of total	Total	Percent of total	Total	Percent of total	Total	Percent of total
Domestic:	45,285	10.3	52,866	16.3	312,240	56.9	216,415	48.7
Pacific Coast area	384	0.1	30	-	47,486	8.7	35,545	8.0
All other areas	44,901	10.2	52,836	16.3	264,754	48.2	180,870	40.7
Gas manufacturing:	25,682	5.9	15,637	4.8	41,199	7.5	22,323	5.0
Pacific Coast area	-	-	-	-	3,848	0.7	1,106	0.2
All other areas	25,682	5.9	15,637	4.8	37,351	6.8	21,217	4.8
Industrial fuel:	48,100	11.0	42,043	12.9	91,033	16.6	105,040	23.6
Pacific Coast area	-	-	-	-	9,193	1.7	4,861	1.1
All other areas	48,100	11.0	42,043	12.9	81,840	14.9	100,179	22.5
Synthetic rubber components:	268,946	61.3	181,857	55.9	19,631	3.6	26,526	6.0
Pacific Coast area	21,440	4.8	9,204	2.8	-	-	-	-
All other areas	247,506	56.5	172,653	53.1	19,631	3.6	26,526	6.0
Chemical manufacturing:	45,959	10.5	26,227	8.1	76,412	13.9	66,776	15.0
Pacific Coast area	9,462	2.2	8,162	2.5	9,500	1.7	8,255	1.9
All other areas	36,497	8.3	18,065	5.6	66,912	12.2	58,521	13.1
Internal-combustion-engine fuel:	4,467	1.0	6,469	2.0	8,297	1.5	7,453	1.7
Pacific Coast area	-	-	-	-	3,368	0.6	3,563	0.8
All other areas	4,467	1.0	6,469	2.0	4,929	0.9	3,890	0.9
All other uses:	-	-	41	-	15	-	48	-
Pacific Coast area	-	-	-	-	-	-	-	-
All other areas	-	-	41	-	15	-	48	-
Total sales:	438,439	100.0	325,140	100.0	548,827	100.0	444,581	100.0
Pacific Coast area	31,286	7.1	17,396	5.3	73,395	13.4	53,330	12.0
All other areas	407,153	92.9	307,744	94.7	475,432	86.6	391,251	88.0
Percent of butane or propane, respectively, in total l.p.g. sales	25.7	-	25.5	-	32.2	-	34.8	-

1/ In continental United States only.
2/ Subject to revision.

Table II - Sales[1/] of liquefied petroleum gases by uses and regional distribution, 1945-46
(Thousands of gallons)

	BUTANE-PROPANE MIXTURES				TOTAL - ALL SALES			
	1946 2/		1945		1946 2/		1945	
	Total	Percent of total	Total	Percent of total	Total	Percent of total	Total	Percent of total
Domestic:..........................	408,625	56.9	263,981	52.0	766,150	44.9	533,262	41.8
Pacific Coast area..............	70,157	9.8	57,911	11.4	118,027	6.9	93,486	7.4
All other areas.................	338,468	47.1	206,070	40.6	648,123	38.0	439,776	34.4
Gas manufacturing:.................	19,779	2.8	15,889	3.1	86,660	5.1	53,849	4.2
Pacific Coast area..............	15,746	2.2	12,800	2.5	19,594	1.1	13,906	1.1
All other areas.................	4,033	0.6	3,089	0.6	67,066	4.0	39,943	3.1
Industrial fuel:...................	19,982	2.8	16,038	3.2	159,115	9.3	163,121	12.8
Pacific Coast area..............	11,015	1.5	9,293	1.9	20,208	1.2	14,154	1.1
All other areas.................	8,967	1.3	6,745	1.3	138,907	8.1	148,967	11.7
Synthetic rubber components:.....	865	0.1	404	0.1	289,442	17.0	208,787	16.3
Pacific Coast area..............	-	-	-	-	21,440	1.3	9,204	0.7
All other areas.................	865	0.1	404	0.1	268,002	15.7	199,583	15.6
Chemical manufacturing:..........	185,284	25.8	131,288	25.9	307,655	18.1	224,291	17.6
Pacific Coast area..............	1,566	0.2	548	0.1	20,528	1.2	16,965	1.3
All other areas.................	183,718	25.6	130,740	25.8	287,127	16.9	207,326	16.3
Internal-combustion-engine fuel:.	83,458	11.6	79,418	15.7	95,222	5.6	93,430	7.3
Pacific Coast area..............	37,931	5.3	35,911	7.1	41,299	2.4	39,474	3.1
All other areas.................	45,527	6.3	43,507	8.6	54,923	3.2	53,956	4.2
All other uses:....................	23	-	27	-	38	-	116	-
Pacific Coast area..............	20	-	22	-	20	-	22	-
All other areas.................	3	-	5	-	18	-	94	-
Total sales:.......................	718,016	100.0	507,015	100.0	1,705,282	100.0	1,276,766	100.0
Pacific Coast area..............	136,435	19.0	116,485	23.0	241,116	14.1	187,211	14.7
All other areas.................	581,581	81.0	390,560	77.0	1,464,166	85.9	1,089,555	85.3
Percent of butane-propane mixtures in total l.p.g. sales..	42.1	-	39.7	-	-	-	-	-

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1/ In continental United States only. 2/ Subject to revision.

Table III.--. Exports of Liquefied Petroleum Gases
(Thousands of gallons) 1/

Countries of Destination	1942	1943	1944	1945	1946
Canada........................	3,501	4,499	7,507	15,044	30,379
Mexico........................	4,548	5,374	6,743	10,615	15,955
Bermuda.......................	64	59	86	103	147
Brazil........................	71	-	-	63	289
France........................	-	-	-	-	1,941
Portugal......................	114	54	64	97	79
Republic of the Philippines...	-	-	-	12	101
All other countries...........	87	76	157	125	200
Total.........................	8,385	10,062	14,557	26,059	49,091

1/ Converted from "pounds" to "gallons" at 4.5 pounds per gallon.

Source: Bureau of the Census, United States Department of Commerce.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OCT 27 1947
UNIVERSITY OF ILLINOIS

J. A. KRUG, Secretary James Boyd, Director

FOR RELEASE October 27, 1947

MINERAL MARKET REPORT
MMS NO. 1547

CRUSHED AND BROKEN STONE IN 1946

The output of crushed and broken stone in the United States in 1946, as reported by producers to the Bureau of Mines, United States Department of the Interior, totaled 177,477,780 short tons valued at $201,367,266, an increase of 16 percent in quantity and 25 percent in value compared with 1945. Included in this total is stone sold or used for concrete aggregates, railroad ballast, metallurgical use (flux), agricultural limestone, refractory stone, riprap, stone sand, alkali works, calcium carbide works, sugar and glass factories, paper mills, and in various other chemical and manufacturing processes. Stone used in the manufacture of lime and cement, asphaltic stone, and slate used for granules and flour are not included in this total.

Crushed and broken stone used for concrete aggregates and railroad ballast (60 percent of the total output in 1946) increased 26 percent in quantity and 38 percent in value, compared with 1945. Ninety-three percent of the 90,358,900 short tons used for concrete aggregates was produced by commercial operators and 7 percent by Government agencies.

Metallurgical uses, which took 14 percent of the total crushed and broken stone in 1946, showed a decrease of 9 percent in quantity and 6 percent in value. Limestone for agricultural purposes (13 percent of the total tonnage of crushed stone in 1946) increased 31 percent in quantity and 25 percent in value compared with 1945. Other uses took 13 percent of the total, or 22,271,020 short tons valued at $37,200,022.

In 1946, limestone (including dolomite) constituted 76 percent of all crushed and broken stone sold (excluding that used for making cement and lime), and was quarried in all but four States.

The following tables present the salient statistics of the crushed and broken stone industries in 1946.

Prepared by Nan C. Jensen under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch.

(over)

Crushed and broken stone sold or used by producers in the United States, 1945-46, by principal uses

Use	1945			1946		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Concrete and road metal	64,108,190	$65,535,403	$1.02	90,358,900	$97,765,446	$1.08
Railroad ballast........	21,265,070	14,894,216	.70	16,908,350	13,127,058	.78
Furnace flux(limestone)	27,639,520	22,076,393	.80	25,157,760	20,791,833	.83
Agricultural(limestone)	17,395,570	25,892,317	1.49	22,781,750	32,482,907	1.43
Alkali works............	7,076,330	4,068,060	.57	7,418,690	5,230,804	.71
Riprap.................	4,801,170	5,589,584	1.16	3,847,550	5,010,207	1.30
Refractory stone 1/....	2,526,650	4,545,339	1.80	2,088,080	4,157,179	1.99
Asphalt filler.........	455,360	971,570	2.13	459,020	1,270,734	2.77
Calcium carbide works..	549,510	639,833	1.16	411,660	437,231	1.06
Sugar factories........	2/340,310	2/691,922	2.03	378,720	693,058	1.83
Glass factories........	2/556,610	2/937,615	1.68	648,250	1,163,161	1.79
Paper mills............	352,990	620,943	1.76	385,620	685,912	1.78
Other uses.............	5,279,240	14,996,069	2.84	6,633,430	18,551,736	2.80
	152,346,520	161,459,264	1.06	177,477,780	201,367,266	1.13
Portland cement (including "cement rock")3/..	27,332,000	(4/)	.....	43,877,000	(4/)	.....
Natural cement ("cement rock")3/..............						
Lime 5/................	11,841,000	(4/)	.....	11,985,000	(4/)	.....
	191,520,000	(4/)	.....	233,340,000	(4/)	.....

1/ Ganister (sandstone), mica schist, dolomite, and soapstone.
2/ Revised figure.
3/ Value reported as cement in chapter on Cement.
4/ No value available for stone used in manufacture of cement and lime.
5/ Value reported as lime in chapter on Lime.

Crushed stone sold or used by commercial producers in the United States in 1946, by methods of transportation 1/

Method of transportation	Short tons	Percent of total
Truck..	73,076,890	43
Rail...	55,627,720	33
Waterway.......................................	14,765,600	9
Unspecified....................................	26,166,390	15
	169,636,600	100

1/ For practical purposes the entire output of noncommercial operations commonly is moved by truck. Including noncommercial production, crushed stone moved as follows: Truck 46 percent, rail 31 percent, water 8 percent, and unspecified 15 percent.

Crushed and broken stone sold or used by producers in the United States in 1946, by kinds

Kind	Concrete and road metal			Railroad ballast		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Granite	6,803,850	$8,465,073	$1.24	2,354,050	$2,403,249	$1.02
Basalt	12,863,090	16,101,322	1.25	2,530,110	2,429,099	.96
Marble	....	....	......	....	....	.....
Limestone	62,270,570	66,307,005	1.06	7,330,420	6,083,202	.83
Sandstone	1,716,400	1,830,536	1.07	269,790	315,075	1.17
Miscellaneous stone[1]	6,704,990	5,061,510	.75	4,423,980	1,896,433	.43
	90,358,900	97,765,446	1.08	16,908,350	13,127,058	.78

Kind	Other uses			Total		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Granite	1,426,360	1,911,486	$1.34	10,584,260	$12,779,808	$1.21
Basalt	956,990	2,082,312	2.18	16,350,190	20,612,733	1.26
Marble	128,250	838,964	6.54	128,250	838,964	6.54
Limestone	64,612,350	77,380,086	1.20	134,213,340	149,770,293	1.12
Sandstone	2,106,770	6,934,613	3.29	4,092,960	9,080,224	2.22
Miscellaneous stone[1]	979,310	1,327,301	1.35	12,108,780	8,285,244	.68
	70,210,530	90,474,762	1.29	177,477,780	201,367,266	1.13

[1] Includes soapstone, mica schist, volcanic rock, argillite, and other varieties that cannot be classified in the principal groups.

Stone for concrete and road metal sold or used by commercial and noncommercial operators in the United States, 1942-46

(Figures for "noncommercial operations" represent tonnages reported by States, counties, municipalities, and other Government agencies, produced either by themselves or by contractors expressly for their consumption, often with publicly owned equipment; they do not include purchases from commercial producers. Figures for "commercial operations" represent tonnages reported by all other producers.)

Year	Commercial operations		Noncommercial operations		Total		
	Short tons	Average value per ton	Short tons	Average value per ton	Short tons	Average value per ton	Percent of change in quantity from preceding year
1942	92,251,930	$0.97	15,449,080	$1.05	107,701;010	$0.98	-2
1943	74,906,610	1.01	7,505,770	1.05	82,412,380	1.01	-23
1944	56,815,950	1.02	7,979,540	1.06	64,795,490	1.02	-21
1945	59 347,220	1.01	4,760,970	1.12	64,108,190	1.02	-1
1946	83,879,680	1.07	6,479,220	1.23	90,358,900	1.08	+41

Limestone (crushed and broken stone) sold or used by producers in the United States in 1945-46, by uses

Use	1945		1946	
	Short tons	Value	Short tons	Value
Riprap	1,777,940	$2,033,420	1,590,120	$2,050,718
Fluxing stone	27,639,520	22,076,393	25,157,760	20,791,833
Concrete and road metal	42,455,370	43,727,822	62,270,570	66,307,005
Railroad ballast	9,307,200	7,377,682	7,330,420	6,083,202
Agriculture	17,395,570	25,892,317	22,781,750	32,482,907
Alkali works	7,076,330	4,068,060	7,418,690	5,230,804
Calcium carbide works	549,510	639,833	411,660	437,231
Coal-mine dusting	216,160	680,723	208,830	632,729
Filler (not whiting substitute):				
Asphalt	455,360	971,570	459,020	1,270,734
Fertilizer	401,160	661,348	553,680	1,076,728
Other	138,750	428,991	220,370	645,440
Filter beds	20,920	38,322	16,410	33,324
Glass factories	1/556,610	1/937,615	648,250	1,163,161
Limestone sand	615,400	482,093	622,230	437,882
Limestone whiting 2/	343,220	2,905,637	405,380	3,523,025
Magnesia works (dolomite) 3/	295,540	373,919	294,360	464,750
Mineral food	291,580	1,310,757	373,630	1,697,507
Mineral (rock) wool	39,170	39,575	22,200	23,400
Paper mills	352,990	620,943	385,620	685,912
Poultry grit	114,670	751,469	117,630	822,985
Refractory (dolomite)	1,027,090	1,120,136	1,035,110	1,146,364
Road base	298,930	233,979	283,820	252,806
Stucco, terrazzo, and artificial stone	25,590	148,332	25,830	171,113
Sugar factories	1/340,310	1/691,922	378,720	693,058
Other uses 4/	199,800	300,319	447,350	543,291
Use unspecified	305,250	423,321	753,930	1,101,884
	112,239,940	118,936,498	134,213,340	149,770,293

1/ Revised figure.

2/ Includes stone for filler for calcimine, caulking compounds, explosives, foundry compounds, glue, insecticides, leather goods, linoleum, paint, paper, phonograph records, plastics, pottery, putty, roofing, rubber, tooth paste, wire coating, and unspecified uses.

3/ Includes stone for refractory magnesia.

4/ Includes stone for acid neutralization, athletic-field marking, carbon dioxide, chemicals (unspecified), concrete blocks and pipes, dyes, electric products, fill material, magnesium metal, motion-picture snow, oil-well drilling, rayon, spalls, waste rock, and water treatment.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
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FOR RELEASE October 27, 1947

MINERAL MARKET REPORT
MMS NO. 1548

DIMENSION STONE IN 1946

Dimension stone (exclusive of slate) sold or used by producers in the United States in 1946, as reported by the producers to the Bureau of Mines, United States Department of the Interior, totaled 1,374,580 short tons valued at $32,972,200, an increase of 30 percent in quantity and 85 percent in value, compared with 1945. This total includes all dimension stone--blocks or slabs of natural stone that are cut or trimmed to definite shapes and sizes--sold or used for rough construction, cut stone, slabs, mill blocks, rubble, monumental purposes, paving blocks, curbing, and flagging.

The quantity of dimension stone used as building stone continued the upward climb begun in 1945 after reaching the all-time low in 1944. Sales of building stone in 1946 (9,166,390 cubic feet valued at $13,767,873) showed an increase of 87 percent in quantity and 152 percent in value compared with 1945, but amounted to only 26 percent of the all-time high reached in 1929. Rubble, also classed as a building stone but not included in the above total for dimension stone, decreased 25 percent in quantity but increased 18 percent in value.

Memorial stone production, which is an important branch of the granite and marble industries, has been maintained at relatively high levels. Sales of stone for monumental purposes amounted to 3,677,920 cubic feet valued at $17,434,556 in 1946, an increase of 21 percent in quantity and 53 percent in value.

Paving block sales increased greatly in 1946 compared with 1945, and showed an increase of 172 percent in number, 238 percent in tonnage, and 125 percent in value. A higher proportion of the 1946 output consisted of large blocks.

Curbing sales rose 137 percent in quantity and 167 percent in value. Flagstone sales increased 77 percent in quantity and 130 percent in value.

The following tables present the salient statistics of the dimension-stone industries in 1946.

Prepared by Nan C. Jensen under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch..

(over)

Dimension stone sold or used by producers in the United States, 1945-46, by kinds and uses

Kind and use	1945	1946 Total	1946 Percent of change
Granite:			
Building stone:			
Rough construction..................short tons	15,220	69,750	+358
Value.....................................	$56,314	$380,338	+575
Average per ton...........................	$3.70	$5.45	+47
Cut stone, slabs, and mill blocks....cubic feet	151,250	538,810	+256
Value.....................................	$328,366	$2,127,124	+548
Average per cubic foot....................	$2.17	$3.95	+82
Rubble..............................short tons	108,880	130,820	+20
Value.....................................	$192,107	$263,045	+37
Monumental stone....................cubic feet	2,600,760	3,194,740	+23
Value.....................................	$8,223,343	$13,433,094	+63
Average per cubic foot....................	$3.16	$4.20	+33
Paving blocks.........................number..	212,570	578,750	+172
Value.....................................	$22,336	$50,346	+125
Curbing.............................cubic feet	119,270	314,540	+164
Value.....................................	$153,819	$458,312	+198
Total:			
Quantity..............approximate short tons	361,650	535,230	+48
Value.....................................	$8,981,285	$16,712,268	+86
Basalt and related rocks (trap rock):			
Building stone:			
Rough construction..................short tons	7,470	20,470	+174
Value.....................................	$19,702	$53,237	+170
Average per ton...........................	$2.64	$2.60	-2
Rubble..............................short tons	196,050	29,460	-85
Value.....................................	$210,693	$17,232	-92
Total:			
Quantity............................short tons	203,520	49,930	-75
Value.....................................	$230,395	$70,469	-69
Marble:			
Building stone (cut stone, slabs, and mill blocks)...........................cubic feet	265,500	422,880	+59
Value.....................................	$1,573,148	$3,079,553	+96
Average per cubic foot....................	$5.93	$7.28	+23
Monumental stone....................cubic feet	438,110	483,180	+10
Value.....................................	$3,132,284	$4,001,462	+28
Average value per cubic foot..............	$7.15	$8.28	+16
Total:			
Quantity..............approximate short tons	59,690	77,010	+29
Value.....................................	$4,705,432	$7,081,015	+50

Kind and use	1945	1946	
		Total	Percent of change
Limestone:			
Building stone:			
Rough construction................short tons	92,090	57,670	-37
Value....................................	$138,825	$147,420	+6
Average per ton..........................	$1.51	$2.56	+70
Cut stone, slabs, and mill blocks.cubic feet	2,298,140	4,678,050	+104
Value....................................	$2,267,501	$5,516,423	+143
Average value per cubic foot.............	$0.99	$1.18	+19
Rubble............................short tons	69,780	95,020	+36
Value....................................	$73,413	$170,832	+133
Flagging..........................cubic feet	65,060	90,240	+39
Value....................................	$25,272	$44,229	+75
Total:			
Quantity...........approximate short tons	334,480	504,070	+51
Value....................................	$2,505,011	$5,878,904	+135
Sandstone:			
Building stone:			
Rough construction................short tons	9,220	24,880	+170
Value....................................	$35,276	$134,644	+282
Average per ton..........................	$3.83	$5.41	+41
Cut stone, slabs, and mill blocks.cubic feet	323,230	1,014,600	+214
Value....................................	$389,594	$1,466,105	+276
Average per cubic foot...................	$1.21	$1.45	+20
Rubble............................short tons	13,150	27,940	+112
Value....................................	$65,051	$176,994	+172
Curbing...........................cubic feet	38,990	60,360	+55
Value....................................	$49,978	$86,165	+72
Flagging..........................cubic feet	194,130	363,620	+87
Value....................................	$197,051	$463,170	+135
Total:			
Quantity...........approximate short tons	64,240	160,900	+150
Value....................................	$730,950	$2,327,078	+216
Miscellaneous stone: 1/			
Building stone....................cubic feet	373,530	416,470	+11
Value....................................	$676,285	$863,029	+28
Average per cubic foot...................	$1.81	$2.07	+14
Rubble............................short tons	2,570	10,190	+296
Value....................................	$7,381	$21,492	+191
Flagging..........................cubic feet	9,290	21,760	+134
Value....................................	$5,899	$17,965	+205
Total:			
Quantity...........approximate short tons	35,110	47,440	+35
Value....................................	$689,565	$902,486	+31
Total dimension stone, excluding slate:			
Quantity..............approximate short tons	1,058,690	1,374,580	+30
Value....................................	$17,848,638	$32,972,220	+85
Slate as dimension stone. . approximate short tons	69,660	96,250	+38
Value....................................	$1,971,740	$3,419,502	+73
Total dimension stone, including slate:			
Quantity..............approximate short tons	1,128,350	1,470,830	+30
Value....................................	$19,820,378	$36,391,722	+84

1/ Includes soapstone, mica schist, volcanic rocks, argillite, and other varieties that cannot be classified in the principal groups.

Dimension stone sold or used by producers in the United States, 1945-46, by uses

Use	1945		1946	
	Quantity	Value	Quantity	Value
Dimension stone:				
Building stone:				
Rough construction........short tons..	155,750	$926,402	208,170	$1,578,668
Cut stone, slabs, and mill blocks.cu.ft.	3,038,120	4,558,609	6,654,340	12,189,205
Approximate equivalent in short tons.	225,870	....	499,050	....
Rubble....................short tons..	390,430	548,645	293,430	649,604
Monumental stone...........cubic feet..	3,038,870	11,360,627	3,677,920	17,434,556
Approximate equivalent in short tons..	250,850	....	300,070	....
Paving blocks..............number......	212,570	22,336	578,750	50,346
Approximate equivalent in short tons..	1,560	....	5,270	....
Curbing....................cubic feet..	158,260	203,797	374,900	544,477
Approximate equivalent in short tons..	12,760	....	30,460	....
Flagging...................cubic feet..	268,480	228,222	475,620	525,364
Approximate equivalent in short tons..	21,470	....	38,130	....
Total dimension stone (quantities approximate, in short tons)..........	1,058,690	17,848,638	1,374,580	32,972,220

Building stone sold or used by producers in the United States in 1946, by kinds

Kind	Rough			
	Construction		Architectural	
	Cubic feet	Value	Cubic feet	Value
Granite..........................	838,420	$380,338	143,840	$156,821
Basalt...........................	242,990	53,237	....	....
Marble...........................	....	....	107,500	277,123
Limestone........................	700,640	147,420	2,596,340	1,843,624
Sandstone........................	313,530	134,644	102,910	66,864
Miscellaneous stone..............	416,470	863,029	....	....
	2,512,050	1,578,668	2,950,590	2,344,432

Kind	Finished				Total	
	Sawed 1/		Cut 1/			
	Cubic feet	Value	Cubic feet	Value	Cubic feet	Value
Granite..........	253,190	$654,453	141,780	$1,315,350	1,377,230	$2,507,462
Basalt...........	....	....	....	....	242,990	53,237
Marble...........	101,890	531,408	213,490	2,271,022	422,880	3,079,553
Limestone........	1,487,950	1,607,584	593,760	2,065,215	5,378,690	5,663,843
Sandstone........	855,600	1,217,677	56,090	181,564	1,328,130	1,600,749
Miscellaneous....	....	....	....	....	416,470	863,029
	2,698,630	4,011,122	1,005,120	5,833,651	9,166,390	13,767,873

1/ For granite, sawed stone corresponds to dressed stone for construction work (walls, foundations, bridges) and cut stone to architectural stone for high-class buildings.

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary JAMES BOYD, Director

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For release October 28, 1947.

MINERAL MARKET REPORT
M. M. S. NO. 1549

LEAD INDUSTRY IN 1946

Lead production from domestic mines dropped 14 percent in 1946, and, for the first year on record, was exceeded by the smelter production of secondary lead, according to final figures by the Bureau of Mines, United States Department of the Interior. The supply of refined lead available for consumption continued to decline despite an advance in price to an unprecedented 12.55 cents per pound at the year's end. Domestic mine production of lead and refinery output from domestic ores and base bullion declined to the lowest levels since 1935 and 1933, respectively. Total output of refined lead at primary refineries fell 25 percent and antimonial lead production decreased 11 percent. Imports of lead-bearing materials urgently needed to offset the decreasing domestic mine output dropped to the lowest level since 1939. Outstanding among the many factors which restricted production during the year were prolonged labor strikes at mine, mill, smelters, and refineries; continued labor shortages which prevented capacity operations at many producing plants; uncertainty regarding extension of the Office of Price Administration and ceiling prices; and the consequent unstable price structure during the month when OPA was inoperative. Ceiling prices on virtually all commodities, including lead, were removed in November. Other Government controls of the lead industry which were revoked included removal of import restrictions which had prevented public purchases of foreign lead, the 5-year old General Preference Order M-38, Lead Chemical Order L-354, and Order L-355 pertaining to use of lead for manufacture of tetraethyl fluid.

Lead production was curtailed by work stoppages which began in Utah on January 21 when approximately 1,300 workers at the mining and smelting operations of the American Smelting & Refining Co. and the United States Smelting, Refining & Mining Co. went on strike following collapse of negotiations for increased wages. Strike conditions spread rapidly and on February 25 workers in virtually every lead mining, milling, and smelting operation of the American Smelting & Refining Co. joined in the dispute. Lead-zinc mining and milling operations of the Phelps Dodge Corp. at Bisbee, Arizona, were closed by strike on March 20 along with certain of the Corporation's Arizona, Texas, and New York copper mining and metallurgical operations. Virtually all strikes at lead mines, mills, smelters, and refineries were settled by the end of June, although one of short duration occurred at the mines and mills of the St. Joseph Lead Co. in Southeastern Missouri during the last week in October.

Government regulations. - Lead continued under Government control during most of 1946 through provisions of Civilian Production Administration General Preference Order M-38. In operation the Order prohibited use of lead for certain purposes but permitted varying freedom in its consumption in essential uses. Several amendments were issued during the year changing quotas (usually to a lower level) of lead

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Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

permissible for certain uses. Upon almost unanimous recommendations of the lead producing and consuming industries, the Civilian Production Administration revoked Order M-38 on December 27, thus virtually ending the governmental control of lead which began in October 1941. CPA Limitation Order L-354, affecting the use of lead in the manufacture of lead chemicals and Order L-355 limiting consumption of lead for tetraethyl lead were operative until their revocation December 27. Government control on imports of lead as outlined in CPA General Import Order M-63 were eliminated, effective November 18.

Subsidy payments under the Premium Price Plan for over-quota production were continued through June but collapsed with the expiration of OPA and ceiling prices June 30. Upon reestablishment of the OPA, provisions were made for retroactive premium payments to cover the period when no plan was in effect.

Production. - The mine production of recoverable lead (including that made into pigments) from domestic mines in the United States and Alaska decreased 14 percent in 1946, was 32 percent under the war-period peak in 1942, and was 49 percent below the average production in the period 1925 through 1929. Missouri again ranked first in the production of lead, and the Southeastern Missouri district continued to be the largest lead-producing area, supplying 40 percent of the total domestic output. The Western States contributed 49 percent of the total domestic production despite a decline in output of 10 percent from 1945. Idaho continued to be the largest producer of lead in the Western States and second largest in the United States, notwithstanding a production decline of 12 percent and the smallest output of any year since 1899.

Primary refineries in the United States in 1946 produced 346,210 short tons of refined lead, a decline of 25 percent from the 1945 output of 462,110 tons. Of the 338,197 tons of primary lead produced in 1946, domestic ores and base bullion supplied 87 percent and 13 percent was derived from foreign ores and imported base bullion, compared with 80 and 20 percent, respectively, in 1945. Antimonial lead production at primary refineries decreased 11 percent to 50,480 tons in 1946. The quantity of antimony contained in antimonial lead produced in 1946 dropped to 6.5 percent owing to a greater demand for low-percentage alloys for use in the manufacture of such items as type metal, cable covering, sheet and pipe, and collapsible tubes and foil.

Refined lead produced at primary refineries in the United States, by sources, 1945-46, in short tons

	1945	1946
Refined lead:		
From domestic ores & base bullion..........	356,535	293,309
From foreign ores..........................	86,932	44,790
From foreign base bullion..................	118	98
Total from primary sources..............	443,585	338,197
From scrap.................................	18,525	8,013
Total refined lead......................	462,110	346,210
Average sales price per pound................	$0.064	$0.084
Total calculated value of primary lead 1/....	$56,778,880	$56,817,096

1/ Excludes value of refined lead produced from scrap at primary refineries.

Antimonial lead produced at primary lead refineries
in the United States, 1945-46, in short tons

Year	Production	Lead content				Antimony content		
		From domestic ore	From foreign ore	From scrap	Total	From domestic and foreign ore 1/	From scrap	Total
1945..	56,495	7,286	2,695	42,366	52,347	1,992	2,156	4,148
1946..	50,480	11,196	2,149	33,850	47,195	1,457	1,828	3,285

1/ Includes production from foreign base bullion and domestic primary smelter residues.

Consumption. - A survey of 575 plants in 1946 representing an estimated 98 percent of the consumers of refined lead indicated a total consumption of 520,525 short tons of refined lead, a decrease of 18 percent from 1945. Some secondary as well as primary refined lead is included in this figure. Antimonial lead, unrefined scrap lead, and lead in alloys are excluded. Of the total consumed, 25 percent was used for making red lead and litharge; 13 percent for cable covering; 10 percent for storage batteries; 8 percent for white lead; 7 percent for tetraethyl fluid; 6 percent for solder; 5 percent for pipes, traps, and bends; 5 percent for sheet lead; 3 percent for ammunition; and 18 percent for a variety of products and uses.

Consumption of refined lead in the United States
in 1945-46, by uses, in short tons

	1945	1946
Ammunition....................................	29,315	16,857
Bearing metal.................................	14,104	11,012
Brass & bronze................................	7,069	5,328
Cable covering................................	86,158	69,004
Calking lead..................................	13,374	8,314
Casting metals................................	5,322	3,566
Collapsible tubes.............................	7,428	7,189
Foil..	2,185	2,143
Pipes, traps & bends..........................	24,061	27,372
Sheet lead....................................	30,624	26,430
Solder..	27,475	32,279
Storage batteries.............................	60,179	53,413
Terne plate...................................	2,178	4,839
Type metals...................................	1,401	1,487
White lead....................................	35,611	43,294
Red lead & litharge...........................	157,171	128,513
Tetraethyl lead...............................	75,890	37,902
Chemicals & insecticides......................	8,567	8,169
Annealing.....................................	5,525	5,514
Galvanizing...................................	988	1,132
Lead plating..................................	1,130	1,182
Weights & ballast.............................	9,539	3,089
Other...	32,205	22,497
Total...	637,499	520,525

In 1946 the calculated supply of refined primary lead made available for shipment to consumers was 477,789 tons, 29 percent under the comparable 1945 total. This figure of apparent shipments (based on production, net change in producers' and Government-owned stocks, and net imports) is probably more nearly correct than the actual receipts of 459,502 tons reported by consumers because of incomplete coverage of the survey.

Stocks. - According to reports submitted to the Bureau of Mines, stocks of refined lead at primary lead smelters and refiners increased (9 percent) from 37,691 tons (revised figure) on January 1, 1946 to 40,963 tons on December 31, 1946. Primary antimonial lead stocks at these same plants decreased (12 percent) from 6,773 short tons at the beginning of 1946 to 5,935 tons at the end of the year. Consumers' stocks of domestic and foreign refined lead decreased 59 percent during the year. Industry-owned stocks were augmented by a supply of Government-owned lead stored at strategic points throughout the United States for allocation to consumers as needed. According to reports submitted to the Civilian Production Administration, Government stocks of refined lead, all corroding grade, were 45,493 short tons on December 31, 1946, compared with 68,700 tons of refined lead on January 1, 1946.

Stocks of lead held at primary smelters and refineries at the end of the year, 1945-46, lead content, in short tons

	Refined lead	Antimonial lead	In ore, concentrates, etc. 2/	In base bullion 2/
Dec. 31, 1945...	1/37,691	6,773	59,095	7,125
Dec. 31 1946...	40,963	5,935	72,400	7,581

1/ Revised figure.
2/ Excluding material in process.

Consumers' stocks of refined lead at end of year, 1945-46, by grades, in short tons

	Domestic and foreign					Foreign (all grades)
	Corroding	Chemical	Common	Other	Total	
December 31, 1945 1/...	33,428	22,040	46,277	1,192	102,937	4,264
December 31, 1946......	10,593	9,856	18,777	2,688	41,914	2,986

1/ Revised figures.

Prices. - Announcement by the Office of Price Administration on May 29 of a higher ceiling price for lead, effective June 3, increased the long-established 6.50-cents-per-pound base price of lead, New York, to 8.25 cents. This new price level, although welcomed by the lead-mining industry, was considered by industry spokesmen to be somewhat below that necessary to effect a prompt relief of the prevailing lead shortage. A bill to extend the OPA was vetoed by the President on June 29 and on July 2 the price of lead advanced to 9.50 cents per pound, New York.

With the reestablishment of OPA by legislative action on July 25, the former ceiling price of 8.25 cents became effective and prevailed until November 9 when the President announced his decontrol order which included the removal of ceiling prices from all metals. The lead market, freed of price limitations, and stimulated by brisk consumer bidding for a share of the inadequate supply, responded swiftly to decontrol, and on November 11 lead was quoted at 10.50 cents, New York. Following removal of lead import restrictions by the Civilian Production Administration on November 18, the price advanced to 11.80 cents, New York, which raised the market price to the prevailing import basis, plus freight and duty charges. On December 16 domestic producers advanced the price to 12.55 cents, New York, the highest level on record. The previous record high, which prevailed for a brief period in June 1917, was 12.00 cents, New York.

Foreign trade. - During 1946 imports of lead dropped to the lowest level since 1939 and were 68 percent below the record total of 1942. As in previous years, the greater part of the lead imported was in the form of pigs and bars, 48 percent of which came from Mexico and virtually all the remainder from Canada, Peru, Japan and Australia. Receipts of lead in ore and matte, which constituted 28 percent of the total imports, were 37 percent under 1945, due largely to a sharp decline in imports from Australia, Peru and Canada, which more than offset a moderate increase from Newfoundland. Imports of lead in ore and matte were principally from Newfoundland, Australia, Peru, Canada, and Bolivia, which together supplied 89 percent of these receipts. Imports of lead in base bullion, all from Peru, increased to 125 tons. Five countries supplied 88 percent of the total lead in all forms imported in 1946: Mexico 34 percent, Canada 18, Peru 13, Newfoundland 12, and Australia 11, compared with 54, 10, 16, 6 and 11 percent, respectively, for a total of 97 percent in 1945.

Imports and exports of lead in 1945 and 1946 1/, in short tons

	1945	1946
Imports (general 2/):		
In ore & matte	70,005	44,407
In base bullion	8	125
Pigs & bars	227,469	112,241
In reclaimed, scrap, etc.	2,844	2,465
Imports (for consumption 3/):		
In ores, flue dust & matte	71,046	28,377
In base bullion	20	20
Pigs & bars	227,311	100,820
Sheets, pipe & shot	14	24
In babbitt, solder, white metal, etc.	73	72
In type metal & antimonial lead	24,706	1,494
Exports:		
Pigs & bars	1,407	597
Foreign pig lead re-exported	377	103

1/ Figures on imports and exports compiled from records of the United States Department of Commerce.

2/ General imports include material imported for immediate consumption plus material entering country under bond.

3/ Imports for consumption include material for which duty has been paid irrespective of the actual date of importation.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
JAMES BOYD, Director

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MINERAL MARKET REPORT
M. M. S. NO. 1550

FUEL BRIQUETS AND PACKAGED FUEL IN 1946

(Fuel-briquet data pp. 1-3; packaged-fuel data pp. 3-4)

These two industries may be defined briefly as follows: The fuel-briquetting industry consists of a relatively few large plants (35 with an average annual output of 86,000 tons in 1946), producing a small hard pillow briquet suitable for shipment; the packaged-fuel industry consists of a larger number of small plants (70 with an average annual output of 2,700 tons in 1946), producing 3- to 4-inch more or less friable cubes wrapped (6 or 8 to a package) in sturdy paper, suitable for local consumption but not as a rule for transportation over long distances.

Fuel briquets.-The fuel-briquetting industry has continued steady expansion of its production since 1938 and in 1946 reached a new high of 3,004,027 net tons, valued at $25,299,162--an 8.8 percent increase in tonnage and a 16.7 percent increase in value over 1945, according to reports received by the Bureau of Mines, United States Department of the Interior (Tables 1 and 2). Briquets were produced in 15 States, Wisconsin leading with 1,511,670 tons, followed by Pennsylvania, West Virginia, and Missouri, in order.

TABLE 1.--SALIENT STATISTICS OF THE FUEL-BRIQUETTING INDUSTRY IN THE UNITED STATES, 1942-46

Year	Production				Imports	Exports	Consumption 1/	Value of production	Plants in operation	Average output per plant (net tons)	Average value per net ton, f.o.b. plant		
	Eastern States	Central States	Pacific Coast States	Total							Eastern States	Central States	Pacific Coast States
	Net tons												
1942-----	565,675	1,047,747	134,878	1,748,300	334	103,921	1,644,713	$11,266,041	30	58,277	$4.56	$7.04	$9.69
1943-----	544,786	1,493,368	125,844	2,163,998	198	174,973	1,989,223	15,148,109	28	77,286	5.04	7.44	10.26
1944-----	625,779	1,704,005	135,177	2,464,961	538	163,672	2,301,827	18,434,579	30	82,165	5.42	8.03	10.07
1945-----	637,740	1,991,733	132,731	2,762,204	722	174,107	2,588,819	21,678,886	32	86,319	5.65	8.40	10.04
1946-----	880,109	1,986,234	137,684	3,004,027	653	163,339	2,841,341	25,299,612	35	85,829	6.61	9.03	11.26

1/ Production plus imports minus exports.

Thirty-five plants reported production in 1946; 29 of these were also active in 1945 and 6 started commercial operations in 1946. Six plants were idle in 1946.

TABLE 2.--PRODUCTION OF FUEL BRIQUETS IN THE UNITED STATES, 1945-46

	1945			1946				
	Plants	Net tons	Value	Plants	Net tons	Value	Change in 1946, percent	
							Tonnage	Value
Eastern States ------------------------------	5	637,740	$3,606,372	7	880,109	$5,817,639	+ 38.0	+ 61.3
Central States ------------------------------	24	1,991,733	16,739,912	25	1,986,234	17,931,641	- .3	+ 7.1
Pacific Coast States ------------------------	3	132,731	1,332,602	3	137,684	1,550,332	+ 3.7	+ 16.3
	1/ 32	2,762,204	21,678,886	1/ 35	3,004,027	25,299,612	+ 8.8	+ 16.7

1/ 1945: 11 plants in Wis.; 3 each in Ill. and Mo.; 2 each in Mich., Pa., and W. Va.; and 1 each in Ark., Calif., Mass., Minn., Nebr., N. Dak., Oreg., Wash., and Wyo.; 1946: 11 plants in Wis.; 4 plants in Pa.; 3 in Ill.; 2 each in Ark., Kans., Mich., Mo., and W. Va.; and 1 each in Calif., Mass., Minn., Nebr., N. Dak., Oreg., and Wash.

Annual capacities of 100,000 tons or more were reported by 16 plants; the largest capacities and productions in 1946 were reported by the Berwind Fuel Co. and the Stott Briquet Co., Inc., for their plants at Superior, Wis.

The wide variety of raw fuels used in the manufacture of fuel briquets in 1946 and the 12 types of briquets made from these fuels are shown in Tables 3 and 4. The major raw fuels used are bituminous coal and Pennsylvania anthracite; however, the use of bituminous coal has decreased in the past five years from 65 percent of the total raw fuels used in 1942 to 45 percent in 1946, while the use of Pennsylvania anthracite has increased in this period from 16 to 39 percent.

TABLE 3.--RAW FUELS USED IN MAKING FUEL BRIQUETS IN THE UNITED STATES, 1946

Character of raw fuels used	Plants	Net tons
Pennsylvania anthracite --------------------	15	1,098,999
Arkansas hard coals ------------------------	10	1/ 275,245
Bituminous low-volatile --------------------	17	1,166,043
Bituminous high-volatile -------------------	4	119,356
Semicoke (lignite char) --------------------	1	153,900
Residual carbon from pyrolysis of natural gas -------------------------	1	
Residual carbon from manufacture of oil gas-	2	
Petroleum coke -----------------------------	3	15,053
	2/ 53	2,828,596

Plants using--	Plants	Raw fuels used (net tons)		
		Yard screenings	Other raw fuels	Total
Yard screenings exclusively (from your own or other yards)-	3	12,927	----------	12,927
Raw fuels (other than yard screenings) exclusively ----------	21	----------	1,517,103	1,517,103
Both yard screenings and other raw fuels-	11	272,711	1,025,855	1,298,566
	35	285,638	2,542,958	2,828,596

1/ Includes relatively small tonnage of Oklahoma semianthracite.
2/ 17 plants used 1 kind of fuel only, 2 plants used 2 kinds (separately), and 16 used mixtures of 2 kinds; hence the sum of these items exceeds the total number of plants.

Prepared by Gertrude S. Goodman and J. A. Corgan, Chief, Anthracite and Coke Section under the supervision of T.W.Hunter, Chief, Coal Economics Division, Economics and Statistics Branch.

Three fuel-briquetting operations used 12,927 tons of yard screenings exclusively in 1946 (Table 3); 21 used 1,517,103 tons of raw fuels--other than yard screenings exclusively; and 11 used both yard screenings (272,711 tons) and other raw fuels (1,025,855 tons).

TABLE 4.--CLASSIFICATION OF PLANTS AND PRODUCTION OF FUEL BRIQUETS IN THE UNITED STATES, BY KINDS OF RAW FUEL USED, 1945-46

Raw fuel used	1945			1946		
	Plants	Briquets produced		Plants	Briquets produced	
		Net tons	Percent of total		Net tons	Percent of total
Pennsylvania anthracite	2	1,765,769	63.9	2	1,983,238	66.0
Mixture of Pennsylvania anthracite and bituminous (low-volatile)	10			11		
Mixture of Pennsylvania anthracite and bituminous (high-volatile)	------			2		
Semianthracite	4	303,423	11.0	6	296,968	9.9
Mixture of Arkansas hard coals	1			1/ 2		
Bituminous:						
Low-volatile	8	510,565	18.5	6	540,844	18.0
High-volatile	2			1		
Semicoke (lignite char)	1	156,448	5.7	1	166,715	5.6
Residual carbon from pyrolysis of natural gas	1			1		
Residual carbon from manufacture of oil gas	2			2		
Petroleum coke	4	25,999	.9	2	16,262	.5
Mixture of petroleum coke and bituminous (high-volatile)	------			1		
	2/ 35	2,762,204	100.0	2/ 37	3,004,027	100.0

1/ One of these plants also used relatively small tonnage of Oklahoma semianthracite.

2/ In 1945, 3 plants made 2 kinds of briquets; in 1946, 2 plants made 2 kinds; hence the sum of these items exceeds the total number of plants active in the respective years.

Asphalt, totalling 181,000 tons and averaging about 125 pounds per ton of fuel briquets produced, remains the preferred type of binder in the briquetting of coal and coke and was used exclusively by 30 plants producing 92 percent of the briquets made in 1946; 3 other plants used asphalt and coal-tar pitch combined, asphalt and starch combined, and oil-gas tar pitch; 2 plants used no binder (one of these briquetted the carbon residue from the manufacture of oil-gas and one used low-volatile bituminous coal).

Pillow-shaped briquets (weighing less than 5 ounces, with one exception--an 11-ounce high-volatile bituminous pillow made by the Coal Processing Corp., at Buckner, Ill., since 1941), were made at 32 plants in 1946 and comprise approximately 77 percent of the total production. Cylindrical (barrel-shaped) briquets were made at 2 plants and 18- and 20-ounce cubes at 1 plant.

Fuel briquets were shipped to 35 States and the District of Columbia and exported principally to Canada (Table 5). Fuel briquets are used almost entirely for space heating but 7 operators reported a total of 30,585 tons used for power or heat at their plants in 1946.

Exports of fuel briquets in 1946 amounted to 163,339 tons and were shipped principally to Canada; imports amounted to 653 tons, all from Canada except a few tons from Mexico.

TABLE 5.--SHIPMENTS OF FUEL BRIQUETS OF DOMESTIC MANUFACTURE IN THE UNITED STATES, 1945-46, BY STATES OF DESTINATION, AS REPORTED BY PRODUCERS, IN NET TONS 1/

State of destination	1945	1946	State of destination	1945	1946
Arkansas	540	438	Nebraska	54,225	56,890
California	15,343	11,577	New Hampshire	3,868	10,686
Connecticut	7,738	15,302	New Jersey	16,241	27,734
Delaware	3,147	3,537	New York	66,731	94,124
District of Columbia	1,606	2,159	North Carolina	13,985	19,080
Florida	615	544	North Dakota	145,401	157,482
Georgia	152	200	Ohio	53,385	74,391
Illinois	92,143	113,082	Oregon	89,901	95,688
Indiana	47,321	63,552	Pennsylvania	52,247	49,498
Iowa	150,815	124,271	Rhode Island	7,100	8,249
Kansas	15,384	13,931	South Carolina	4,057	5,723
Kentucky	5,149	4,939	South Dakota	139,399	132,348
Maine	11,155	17,924	Vermont	1,697	5,864
Maryland	10,028	21,049	Virginia	19,687	24,811
Massachusetts	51,153	63,458	Washington	7,709	6,923
Michigan	131,455	187,452	West Virginia	1,476	2,708
Minnesota	551,855	579,356	Wisconsin	535,883	543,692
Mississippi	----------	97	Wyoming	29	----------
Missouri	276,471	245,903			
				2,585,091	2,784,662

1/ For shipments outside the United States see table of official export statistics "Briquets exported from the United States in 1945-46, by countries of destination and customs districts," published in Minerals Yearbook, 1946.

Data on world production of fuel briquets, received since the close of the war, are shown in Table 6, and give a fairly complete picture for the years 1939-44. During this period production in Germany--the principal briquet-producing country of the world--rose 31 percent and output in the United States more than doubled; but production dropped appreciably in the other larger briquet-producing countries--France, The Netherlands, and Belgium. The United States, which ranked as fifth largest producer in 1939, was the second largest in 1944.

TABLE 6.--WORLD PRODUCTION OF FUEL BRIQUETS, 1939-46, BY COUNTRIES, IN METRIC TONS 1/

[Compiled by B. B. Mitchell]

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Country	1939	1940	1941	1942	1943	1944	1945	1946
Algeria	103,470	95,250	49,459	45,565	50,685	85,000	101,756	98,320
Australia: Victoria 2/	421,254	(3)	440,718	420,086	421,619	435,727	462,380	512,349
Belgium	1,561,210	1,753,600	1,542,620	1,127,430	1,013,410	456,990	787,530	(3)
Bulgaria	88,496	100,000	(3)	(3)	(3)	(3)	(3)	(3)
Canada	66,242	102,173	172,087	220,139	244,892	277,707	275,625	298,960
Czechoslovakia:								
Coal	508,000	535,000	360,000	468,000	553,000	464,000	(3)	(3)
Lignite	333,000	330,000	295,000	261,000	323,000	328,000	(3)	(3)
Eire (Irish Free State)	(3)	5,423	15,446	21,052	90,188	123,749	118,558	(3)
France	8,364,000	6,752,330	4,443,920	3,424,550	3,045,910	1,588,490	3,531,530	5,399,403
Germany:								
Coal 4/	2/ 6,950,000	2/ 6,498,000	2/ 7,855,000	2/ 7,244,000	2/ 7,185,000	2/ 6,418,000	(3)	(3)
Lignite 5/	2/ 44,930,000	2/ 43,853,000	2/ 54,409,000	2/ 55,293,000	2/ 59,706,000	2/ 61,549,000	(3)	(3)
Hungary:								
Coal	509,300	512,400	398,140	268,210	227,480	(3)	(3)	(3)
Lignite	51,600	55,020	62,550	57,130	58,250	6/ 20,450	7/ 13,450	33,670
Indochina	185,400	140,100	96,100	54,600	29,800	17,600	(3)	(3)
Italy	83,052	129,404	121,451	(3)	(3)	(3)	(3)	(3)
Netherlands:								
Coal	1,268,926	1,216,930	1,134,555	968,052	896,192	608,316	412,571	725,859
Lignite	68,607	67,734	65,115	57,005	55,457	42,959	35,757	43,655
Netherlands Indies	85,079	99,315	(3)	(3)	(3)	(3)	(3)	(3)
New Zealand	29,889	28,529	20,220	13,052	12,386	12,661	9,941	13,183
Poland	465,390	755,738	756,537	752,960	813,098	765,217	93,078	529,084
Portugal	(3)	(3)	(3)	(3)	(3)	(3)	72,177	(3)
Rumania	245,487	239,424	178,024	194,726	175,877	(3)	(3)	(3)
Spain	789,815	820,479	412,453	788,612	653,994	924,862	1,049,520	(3)
Tunisia	83,989	48,678	24,259	20,691	16,880	1,430	16,619	32,347
Turkey	14,792	24,497	28,392	(3)	30,256	34,276	23,692	(3)
United Kingdom	813,810	(3)	(3)	(3)	749,342	883,974	1,002,333	1,567,664
United States (includes packaged fuel) 8/	1,004,902	1,211,433	1,422,866	1,815,583	2,158,728	2,395,618	2,694,639	2,898,391
Yugoslavia	132,466	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Total	9/ 69,158,176	9/ 70,374,457	9/ 74,303,912	9/ 73,515,443	9/ 78,511,444	9 77,434,026	(3)	(3)

1/ 1938 data (published in Minerals Yearbook, 1945, p. 1030) revised as follows: Algeria, 89,640 tons; Canada, 67,348; Czechoslovakia (coal) 439,000, (lignite) 199,000; France, 7,815,530; Hungary (coal) 454,790, (lignite) 45,280; Poland, 653,000; total, 67,014,342.

2/ Data for year ended March 31 of year stated.

3/ Data not available.

4/ Beginning October 1939, figures include production from East Upper Silesia.

5/ Beginning October 1938, figures include production from Sudetenland.

6/ January to June, inclusive.

7/ June to December, inclusive.

8/ Includes packaged fuel as follows--1938: 146,012 tons; 1939: 195,504; 1940: 258,105; 1941: 244,797; 1942: 229,560; 1943: 195,592; 1944: 159,455; 1945: 188,823; 1946: 173,198.

9/ Total incomplete; it represents sum of figures given in table only.

Packaged fuel.-Shortages of raw fuels, paper, and binder and inability to operate profitably under existing OPA price ceilings since the war have been reported by the packaged-fuel manufacturers as the principal causes of reduced production and idleness in the war years (Tables 7 and 8). Packaged fuel was exempted from price control by OPA September 25, 1946.

In 1946, 70 plants active in 13 States produced 190,919 net tons, valued at $2,496,388, a decrease in production of 8.3 percent from 1945 (Table 9). Michigan and Wisconsin again led in production and the largest individual producers were the Cleveland-Cliffs Iron Co., at Green Bay, Wis., and the Johnson Coal Cubing Co., Inc., at Detroit, Mich. The relatively large decrease in production in the Eastern States was due principally to the closing down in October 1946 of the plant of the White Glove Packaged Fuel Division of the Blaw Knox Co., in Philadelphia, Pa.

The number of plants producing packaged fuel rose from 61 in 1945 to 70 in 1946 (Table 8); 27 of these are in the Detroit and Cleveland areas, contributing about one-third of the total production.

Additional machinery was installed at 8 plants in 1946; the 5 new plants reported Eberling installations.

One large operator reported about 2 percent of his sales in bulk (unwrapped); these were made of bituminous low-volatile with asphalt binder.

TABLE 7.--SALIENT STATISTICS OF THE PACKAGED-FUEL INDUSTRY IN THE UNITED STATES, 1942-46

Year	Production (net tons)			Value of production	Plants in operation	Average output per plant (net tons)	Average value per net tons, f.o.b. plant	
	Eastern and Pacific Coast States	Central States	Total				Eastern and Pacific Coast States	Central States
1942	7,583	245,465	253,048	$2,540,087	89	2,843	$10.74	$10.02
1943	1/ 4,970	210,635	215,605	2,366,733	72	2,995	1/ 11.55	10.96
1944	1/ 3,788	171,982	175,770	2,053,343	68	2,585	1/ 12.26	11.67
1945	1/ 16,606	191,537	208,143	2,518,636	61	3,412	1/ 12.86	12.04
1946	1/ 9,065	181,854	190,919	2,496,388	70	2,727	1/ 12.93	13.08

1/ Eastern States; no production in Pacific Coast States in 1943-46.

TABLE 8.--ACTIVITY IN NUMBER OF PACKAGED-FUEL PLANTS IN THE UNITED STATES, 1941-46

Year	Active	New	Idle	Out of business	Year	Active	New	Idle	Out of business
1941	103	7	8	14	1944	68	4	22	7
1942	89	4	16	8	1945	61	3	29	5
1943	72	5	23	9	1946	70	1/ 5	2/ 18	3/ 8

1/ 2 in Mich., and 1 each in Ky., Mo., and Ohio and all active in 1946.

2/ 8 in Mich., 3 in Ind., 2 each in Mo., Ohio, and Wis., and 1 in Wash. (15 of these were idle in 1945).

3/ 3 in Mich. and 1 each in Ind., Minn., Ohio, Pa., and Wis. (3 of these were active in 1946).

TABLE 9.--PRODUCTION OF PACKAGED FUEL IN THE UNITED STATES, 1945-46, BY STATES

States	1945			1946		
	Plants	Net tons	Value	Plants	Net tons	Value
Eastern States	1/ 5	16,606	$213,476	1/ 5	9,065	$117,206
Central States:						
Illinois	2	(2)	(2)	3	1,454	23,814
Indiana	2	(2)	(2)	2	(2)	(2)
Iowa	1	(2)	(2)	1	(2)	(2)
Kentucky	------	------	------	1	(2)	(2)
Michigan	21	60,034	724,003	27	55,883	741,486
Minnesota	4	35,191	466,045	4	29,319	413,443
Missouri	------	------	------	1	(2)	(2)
Nebraska	1	(2)	(2)	1	(2)	(2)
Ohio	15	32,271	376,839	16	29,239	377,736
Wisconsin	10	47,351	551,680	9	48,087	600,715
Undistributed 3/	------	16,690	186,593	------	17,872	221,988
Total Central States	56	191,537	2,305,160	65	181,854	2,379,182
Total United States	61	208,143	2,518,636	70	190,919	2,496,388

1/ Maine, 1; Pa., 1; and Va., 3.
2/ Included under "Undistributed"; Bureau of Mines not at liberty to publish figures.
3/ Includes States entered as "(2)" above.

Annual capacities of less than 5,000 tons were reported by 42 plants, which produced a total of 36,026 tons in 1946; 4 plants with capacities over 25,000 tons produced 47,580 tons in 1946.

Six kinds of raw fuels entered into the manufacture of 8 types of packaged fuel in 1946, with bituminous low-volatile predominating (Tables 10 and 11). Thirty-three operators used 44,348 tons of yard screenings exclusively; 15 used 90,151 tons of raw fuels (other than yard screenings) exclusively; and 22 used both yard screenings (18,582 tons) and other raw fuels (34,585 tons).

Starch, totalling 1,007 tons and averaging about 15 pounds per ton of packaged fuel produced is the principal type of binder used and was employed exclusively by 65 plants, producing 138,697 tons, or 73 percent of the total output. Asphalt, totalling 2,211 tons and averaging 89 pounds per ton of packaged fuel produced, was employed exclusively at 3 plants. A combination of asphalt and starch in the manufacture of petroleum coke cubes was used at one plant and cement was used at 2 plants.

The Eberling and Johnson processes generally employ a starch binder. The Glenn Smith process uses an asphalt binder, making cubes which are also sold in bulk (unwrapped).

TABLE 10.--RAW FUEL USED IN MAKING PACKAGED FUEL IN THE UNITED STATES, 1946

Character of raw fuels used	Plants	Net tons	Plants using--	Plants	Raw fuels used (net tons): Yard screenings	Raw fuels used (net tons): Other raw fuels	Raw fuels used (net tons): Total
Bituminous low-volatile	67	171,116	Yard screenings exclusively (from own or other yards)	33	44,348	--------	44,348
Bituminous medium-volatile	1	2,009					
Bituminous high-volatile	2		Raw fuels (other than yard screenings) exclusively	15	-------	90,151	90,151
Pensylvania anthracite	1	7,845					
Semianthracite	3		Both yard screenings and other raw fuels	22	18,582	34,585	53,167
Petroleum coke	8	6,696					
	1/ 82	187,666		70	62,930	124,736	187,666

1/ 58 plants used 1 kind of fuel only, 8 used 2 kinds (separately), and 4 used mixtures of 2 kinds; hence the sum of these items exceeds the total number of active plants.

TABLE 11.--CLASSIFICATION OF PLANTS AND PRODUCTION OF PACKAGED FUEL IN THE UNITED STATES, BY KINDS OF RAW FUEL USED, 1945-46

Raw fuel used	1945			1946		
	Plants	Packaged fuel produced: Net tons	Packaged fuel produced: Percent of total	Plants	Packaged fuel produced: Net tons	Packaged fuel produced: Percent of total
Bituminous low-volatile (exclusively)	57	167,309	80.4	63	165,734	86.8
Bituminous high-volatile (exclusively)	3	3,147	1.5	1	4,554	2.4
Mixture of bituminous low- and medium-volatile	------	--------	--------	1		
Mixture of bituminous low- and high-volatile	------	--------	--------	1		
Mixture of bituminous low-volatile and Pennsylvania anthracite	1	23,154	11.1	1	16,055	8.4
Mixture of bituminous low-volatile and petroleum coke	1			1		
Semianthracite (exclusively)	2			3		
Petroleum coke (exclusively)	7	14,533	7.0	7	4,576	2.4
	1/ 71	208,143	100.0	1/ 78	190,919	100.0

1/ In 1945, 3 types were made at 1 plant and 2 types at 8 plants; in 1946, 2 types were made at 8 plants; hence the sum of these items exceeds the total number of plants active in the respective years.

NOTE

The complete report with detailed tables, to be released later as a chapter in Minerals Yearbook 1946, will be distributed to the regular mailing list.

Directories of fuel-briquetting and packaged-fuel plants operating in 1946 and a list of manufacturers of equipment will be furnished on request by the Bureau of Mines, Washington 25, D. C.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary   JAMES BOYD, Director

OCT 30 1947
UNIVERSITY OF ILLINOIS

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MINERAL MARKET REPORT
MMS No. 1551.

GOLD AND SILVER IN 1946

Revival of the gold-mining industry progressed slowly in 1946 despite its return to unrestricted operations when War Production Board Order L-208 was rescinded July 1, 1945, according to the Bureau of Mines, United States Department of the Interior. Higher prices for equipment and supplies, higher wages, the difficulty in obtaining efficient labor forces and, in many instances, the large outlay of capital necessary to rehabilitate plants and mine workings, which had deteriorated during the years of idleness, made former operators reluctant to reopen mines with narrow profit margins before the war. Final 1946 figures show that domestic mine production of gold increased 65 percent compared with 1945, but except for the war years 1943-45 was the smallest since 1885; silver output declined 21 percent and, except for 1932, was the lowest since 1872. California regained first place as a gold producer, followed by South Dakota and Alaska in second and third places, respectively. These three leaders accounted for 57 percent of the United States output, depending very largely on straight gold mines, lode and placer. The four leading silver States--Idaho, Utah, Montana, and Arizona--produced 75 percent of the domestic mine silver.

The Treasury buying price for gold continued at \$35 per fine ounce throughout the year. The buying price for silver, which had stood at \$0.7111+ since July 1, 1939, was raised for metal produced domestically after July 1, 1946, to \$0.905, where it remained throughout 1946. That silver which could not qualify for Treasury purchase was held at \$0.7111+ by the Office of Price Administration ceiling until July 1 and was placed under a ceiling of \$0.905 shortly after OPA was reestablished late in July. By the end of the year, however, the New York "official" price for .999 fine silver had declined to \$0.8375.

The excesses of exports over imports of both metals in 1945 were replaced by excesses of imports over exports in 1946. The gains from imports plus the output from domestic mines was far in excess of consumption in the arts and industries in the case of gold and thus gold monetary stocks increased. Consumption of silver, however, was nearly twice the supply from mine output plus net imports with the result that stocks were drawn upon.

Prepared by Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Salient statistics of gold and silver in the United States, 1/ 1942-46

	1942	1943	1944	1945	1946
Mine production, fine ounces:					
Gold	3,457,110	1,363,815	998,394	954,572	1,574,505
Silver	54,090,765	41,460,826	34,473,540	29,024,197	22,914,604
Ore (dry and siliceous) produced (short tons):					
Gold ore	9,487,907	3,766,149	1,964,680	1,364,308	2,395,500
Gold-silver ore	1,163,970	553,566	364,698	276,530	389,681
Silver ore	996,823	643,271	290,297	343,458	209,626
Percentage derived from-					
Dry and siliceous ores:					
Gold	50	38	30	30	40
Silver	37	26	17	24	24
Base metal ores:					
Gold	21	50	58	51	23
Silver	63	74	83	76	75
Placers:					
Gold	29	12	12	19	38
Silver	(2)	(2)	(2)	(2)	(2)
Net industrial consumption:					
Gold	$47,294,810	$86,343,353	$97,298,283	$108,944,332	$153,687,000
Silver, fine ounces	101,398,695	118,000,000	120,100,000	126,300,000	87,000,000
Imports:					
Gold	$315,779,716	$101,792,745	$113,836,359	$93,718,050	$532,961,768
Silver	$41,103,149	$27,902,960	$23,373,037	$27,278,396	$57,577,888
Exports:					
Gold	$102,126	$32,854,590	$959,227,923	$199,967,940	$221,467,636
Silver	$1,999,490	$30,689,397	$126,915,344	$90,936,901	$36,454,690
Monetary stocks: 3/					
Gold	$22,726,000,000	$21,938,000,000	$20,619,000,000	$20,065,000,000	$20,529,000,000
Silver, fine ounces	2,838,000,000	2,687,000,000	2,345,000,000	2,005,000,000	1,951,000,000
Price, average, per fine oz.:					
Gold	$35.00	$35.00	$35.00	$35.00	$35.00
Silver	$0.711+	$0.711+	$0.711+	$0.711+	$0.808
World production, fine oz.:					
Gold	35,400,000	29,300,000	27,070,000	23,930,000	4/
Silver	247,749,000	217,041,000	186,200,000	4/	4/

1/ Philippine Islands and Puerto Rico excluded. 2/ Less than 0.5 percent. 3/ Owned by Treasury Department; privately held coinage not included. 4/ Not available.

Legislation and regulations. - Silver was the subject of some new legislation and government regulation during 1946, but gold was substantially unaffected. The Green Act, which permitted the sale of Treasury silver at 71.11+ cents an ounce for use in the arts and industries, expired December 31, 1945, and was not extended. The Office of Price Administration maintained the price ceiling at 71.11+ cents, the Treasury buying price for domestically mined silver. On July 1 the OPA became defunct but a free market for silver was slow to develop. By July 26 when OPA was reestablished the price of silver had reached 90-3/8 cents. On July 31 the President approved an act amending the Silver Purchase Act of 1939, which raised the price paid by the Treasury for silver domestically mined after July 1, 1946, from 71.11+ to 90.5 cents an ounce. This Act also provided for sales of Treasury silver for use in the arts and industries at prices not lower than 90.5 cents. The OPA raised its ceiling on silver price to permit sales at the higher price. Silver was freed from OPA price control by Presidential order November 10, 1946.

International monetary agreements. - Agreements formulated by the representatives of 44 nations at Bretton Woods, N. H., in July 1944 had been ratified by enough governments during 1945 so that two of the most important institutions created--the International Monetary Fund and the International Bank for Reconstruction and Development--came into existence on December 27, 1945. On December 18, 1946, the Fund took an important step toward world currency stability by announcing initial par values in terms of United States dollars of the currencies of 32 countries and 52 other areas.

Domestic production. - United States gold production in 1946 reached 1,574,505 fine ounces. The proportion of byproduct gold from base-metal ores, which aided in sustaining output during the war years, was reduced from over half in 1945 to 23 percent in 1946 due to prolonged strikes at the base-metal mines and the rehabilitation of some prewar producers. In addition to byproduct gold in 1946, 38 percent was from placers, and 39 percent from dry ores. Production of silver, which had declined uninterruptedly during the war, reached a new low in 1946 when it dropped to 22,914,604 fine ounces. Over 3/4 of this production was recovery from base-metal ores where the long strike-enforced idleness adversely affected silver output. All of the silver recovered at placers and part of that produced from dry ores was a byproduct of operations carried on chiefly for gold.

One of the anomalies of war economy was the emergence of a copper district, West Mountain (Bingham), Utah, as the leading gold producer in the United States, surpassing Lawrence County (Lead), S. Dak., in 1943, 1944, and 1945. In 1946, however, Lawrence County regained the lead.

Mine production of gold and silver in the United States, 1945 and 1946, by States, in fine ounces

	Gold		Silver	
	1945	1946	1945	1946
Western States and Alaska:				
Alaska	68,117	226,781	9,983	41,793
Arizona	77,223	79,024	3,558,216	3,268,765
California	147,938	356,824	986,798	1,342,651
Colorado	100,935	142,613	2,226,780	2,240,151
Idaho	17,780	42,975	8,142,667	6,491,104
Montana	44,597	70,507	5,942,070	3,273,140
Nevada	92,265	90,680	1,043,380	1,250,651
New Mexico	5,604	4,009	465,127	338,000
Oregon	4,467	17,598	10,461	6,927
South Dakota	55,948	312,247	26,564	86,901
Texas	-	9	23,265	42,922
Utah	279,979	178,533	6,106,545	4,118,453
Washington	57,860	51,168	281,444	264,453
Wyoming	2	105	31	26
	952,715	1,573,073	28,823,331	22,765,937
Central States:				
Illinois	-	-	2,198	2,302
Michigan	-	-	21,863	-
Missouri	-	-	94,822	69,401
	-	-	118,883	71,703
Eastern States:				
Alabama	5	1	1	-
Georgia	-	21	-	-
New York	-	-	14,271	15,786
Pennsylvania	1,588	1,150	10,434	7,887
Tennessee	148	95	35,391	18,016
Vermont	104	165	20,586	35,275
Virginia	12	-	1,300	-
	1,857	1,432	81,983	76,964
	954,572	1,574,505	29,024,197	22,914,604

Consumption and uses in industry and the arts. - Consumption of silver in industry and the arts probably would have been larger in 1946 had it not been for the difficulty in obtaining supplies during the first half of the year. Nevertheless consumption was well above the prewar level although below that in the war years. Until its expiration December 31, 1945, the Green Act made Treasury silver available to domestic silver consumers at the ceiling price set by the OPA of 71.11+ cents an ounce. When the Green Act was not renewed the consumers had to enter a controlled market where the OPA barred transactions at prices exceeding the 71.11+ cents ceiling. Domestically produced silver was available at the ceiling price but could not supply much more than about a quarter of the demand. Foreign suppliers foreseeing the possibilities of a higher price withheld their silver. Very large purchases from the Treasury in November and December 1945 under the Green Act helped to meet the needs but some users were driven to the use of monetized silver at $1.29+ an ounce. In the meantime, a contest developed in Congress between those advocating a reenactment of the Green Act and those who favored pricing silver at $1.29+ an ounce, the coinage value. The situation was resolved in an Act requiring the Treasury to buy silver domestically mined after July 1, 1946, at 90.5 cents an ounce and permitting the Secretary of the Treasury to sell silver for the domestic arts and industries at not less than 90.5 cents an ounce. With the approval of the Act July 31, 1946, the situation immediately rearranged itself. The OPA raised its ceiling to 90.5 cents and consumers were able to satisfy all needs from domestic silver mined before July 1 and from imported silver. Only 4,889 fine ounces were purchased from the Treasury under the Act during 1946.

World production. - Factors adverse to both gold and silver production including labor shortages, rising costs, shortage of supplies and equipment, and rising taxes appear to have been world-wide. The decline in world output of gold in progress since 1940 was arrested in 1946, but the increase in 1946 over 1945 was small. Silver production continued an uninterrupted downward trend since 1940, the 1946 level being the lowest since 1891. South Africa maintained first place in world gold production. Very rich ore was cut early in 1946 by deep drilling at Odendaalsrust, 150 miles southwest of Johannesburg. Mexico retained its record as the world's leading silver producer despite an uninterrupted decline since 1942.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

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NOVEMBER 1947

MINERAL MARKET REPORT
M.M.S. NO. 1552

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DISTRIBUTION
OF
PENNSYLVANIA ANTHRACITE
FOR THE
COAL YEAR APRIL 1, 1946 TO MARCH 31, 1947

* * * * * * * *

Prepared by J. A. Vaughan, B. M. Reynolds, and J. A. Corgan, Chief, Anthracite and Coke Section under the supervision of T. W. Hunter, Chief, Coal Economics Division.

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INTRODUCTION

Pennsylvania anthracite as discussed in this study refers to that coal produced in the Lehigh, Schuylkill and Wyoming coal regions located in the following ten counties of northeastern Pennsylvania: Carbon, Columbia, Dauphin, Lackawanna, Lebanon, Luzerne, Northumberland, Schuylkill, Susquehanna, and Wayne. As coal produced in the Bernice Basin of Sullivan County is classified officially as semi-anthracite, it is not included.

The publication of this report on the distribution of Pennsylvania anthracite was made possible by the cooperation of producers, wholesalers, and lake dock operators who voluntarily submitted to the Bureau of Mines, U. S. Department of the Interior, detailed data on shipments of anthracite during the period April 1, 1946 to March 31, 1947. The distribution statistics contained herein account for more than 99 percent of total shipments made during the 1946-47 coal year. The Bureau wishes to thank the shippers for their cooperation in reporting so completely. As is customary in surveys conducted by the Bureau, statistics on individual companies are held confidential and data for cities receiving shipments from less than 3 shippers are not shown. Of the 363 cities selected to appear on the questionnaire, shipments made to 8 have been included under "All other cities" in the states in which they are located since they did not meet the minimum requirement of 3 shippers.

The report form used to obtain the distribution data was designed to eliminate the possibility of duplications in reported tonnage. Each producer was requested to furnish information on direct shipments made for his own account to final destinations, as well as complete data on all shipments made to, or for, the account of other producers, wholesalers, or dock operators. Producers, wholesalers, or dock operators purchasing this coal, in turn, reported final destinations on all tonnages so handled. As a further step to eliminate duplicate reporting, all schedules showing sales to other producers, wholesalers, or dock operators, were checked against those submitted by purchasing companies to trace all shipments to points of destination.

SUMMARY

Shipments reported for the 1946-47 coal year totaled 56,266,875 net tons, an increase of 4,386,824 tons over the 51,880,051 tons reported for the 1945-46 coal year. As illustrated in figure 1, page 4, 88 percent of total shipments, or 49,355,289 tons, was destined to points within the United States; 8 percent, or 4,582,567 tons to the Dominion of Canada; and 4 percent, or 2,329,019 net tons, to other countries, principally Europe. As shown graphically in figure 2, page 4, 86 percent of the total tonnage was shipped from the mines by rail, and 14 percent by over-the-road truck. It is pointed out in footnotes to figure 2, however, that the percentage shown for rail shipments includes all tonnages originating at the mine by rail, some of which reached the point of consumption by lake or tidewater, and that truck includes all shipments made to cities within the producing region, a small part of which may have moved actually by rail.

Since reporting companies were not requested to furnish city of destination on truck shipments, it will be found that data in this report on individual cities normally receiving coal by over-the-road truck are not comparable to that found in the series of SFD reports covering distribution of anthracite for the coal years in the period April 1, 1942 to March 31, 1945. Shipments to cities not served by truck are comparable with those in the SFD reports, and with data published in M.M.S. No. 1454 for the 1945-46 coal year. However, in making comparisons of annual shipments to particular destinations proper weight should be given to the difference in production for the years under study, and it should be remembered that all calculations on method of movement in the SFD series were based upon shipments to retail dealers only whereas figures used in M.M.S. No. 1454 and in this publication are predicated upon shipments to all consumers.

As indicated in figure 1, the Middle Atlantic States received 71.6 percent of total reported shipments in the 1946-47 coal year as compared to 76.7 percent during 1945-46, and the New England States received 9.6 percent as against 10 percent. Although the actual tonnage shipped into these areas in the 1946-47 coal year was higher than in the preceding year, exports to the Dominion of Canada and Europe increased so sharply as to throw both areas into a minus position on a percentage basis.

Shipments to Canada increased from 3,468,355 net tons during the 1945-46 coal year to 4,582,567 tons in the 1946-47 coal year. Since reported shipments of Domestic sizes increased 1,190,574 tons, a slight decrease is indicated for shipments of Steam sizes to that country. Figure 3, page 5, is included to show relative size distribution in Canada and the United States. According to records of the U. S. Department of Commerce exports of anthracite to countries other than Canada totaled 378,327 net tons during the 1945-46 coal year and reached a peak of 2,329,019 tons in 1946-47. While exact information on size was not available on exports other than to Canada an estimated breakdown is furnished in footnote 3 of table 2 listing exports by countries of destination, and by months, on page 28 of this report.

Figure 4 illustrates the percentage distribution of anthracite, by size groups, for the period, April 1, 1942 to March 31, 1947. It is interesting to note that Domestic sizes declined from 61.3 percent of total shipments in the coal year, 1942-43, to 58.8 percent in 1946-47, and Barley and smaller increased from 15.6 percent in 1942-43 to 20.6 percent in 1946-47. While Buckwheat No. 1 and Rice in 1946-47 held at relatively the same tonnage figure as in 1945-46, each declined approximately 1 percent on the basis of total shipments.

The shipment of Pennsylvania anthracite into the primary market area, by sizes, for the coal years in the period, April 1, 1942 to March 31, 1947, is charted in figure 5, page 7. On the basis of total annual shipments of each size into the area, it would appear that the percentages of Buckwheat No. 1, Rice, and Barley shipped in 1946-47 have declined from the preceding year and that Buckwheat Nos. 4 and 5 have registered a decided increase. Broken and Egg sizes have declined from a peak of 6 percent of total shipments into the area during the 1943-44 coal year to approximately 4.7 percent in 1946-47; Stove and Chestnut gained slightly over 1945-46 shipments while shipments of Pea in the past year dropped to 10 percent of total shipments into the area.

As of possible historic interest figure 6 presents graphically the percentage distribution of anthracite, by geographic areas, for the coal years, 1916-17, 1928-29, and 1942-47.

Additional copies of this publication may be obtained by writing to the Bureau of Mines, United States Department of the Interior, Washington 25, D. C. Since the supply is limited, it is suggested that the number of copies requested be held to a minimum.

Table 1.-- DISTRIBUTION OF PENNSYLVANIA ANTHRACITE, APRIL 1, 1946-MARCH 31, 1947 BY STATES, PROVINCES, AND COUNTRIES OF DESTINATION

Destinations	Domestic sizes						Steam sizes						Total All Sizes	Percent of Total
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam		
United States:														
New England States:														
Connecticut------------	1,060	59,770	458,080	512,470	64,095	1,095,475	79,368	38,632	32,581	2,121	55	152,757	1,248,232	2.22
Maine------------------	----	48,523	148,090	129,507	9,154	335,274	20,105	11,679	----	778	2,298	34,860	370,134	0.66
Massachusetts----------	1,383	377,348	1,191,654	751,513	72,372	2,394,270	138,970	89,406	117,207	50,688	4,414	400,685	2,794,955	4.97
New Hampshire----------	----	35,229	109,417	84,029	7,253	235,928	26,067	16,169	86,550	820	----	129,606	365,534	0.65
Rhode Island-----------	----	31,014	149,559	115,711	12,972	309,256	18,598	11,836	----	----	9	30,443	339,699	0.60
Vermont----------------	512	21,472	109,357	83,704	10,312	225,357	40,297	15,838	20,452	590	----	77,177	302,534	0.54
Total	2,955	573,356	2,166,157	1,676,934	176,158	4,595,560	323,405	183,560	256,790	54,997	6,776	825,528	5,421,088	9.64
Middle Atlantic States:														
New Jersey-------------	9,091	139,076	1,101,123	2,157,382	619,912	4,026,584	943,230	665,192	1,202,351	398,773	115,544	3,325,090	7,351,674	13.07
New York---------------	25,175	1,072,271	4,067,997	3,916,664	1,368,320	10,450,427	3,809,200	1,293,379	1,203,388	237,650	258,851	6,802,468	17,252,895	30.66
Pennsylvania 1/--------	95,559	216,936	1,361,865	3,342,230	2,450,843	7,467,433	1,500,377	1,618,825	2,661,303	1,735,476	639,150	8,155,131	15,622,564	27.76
Total	129,825	1,428,283	6,530,985	9,416,276	4,439,075	21,944,444	6,252,807	3,577,396	5,067,042	2,371,899	1,013,545	18,282,689	40,227,133	71.49
South Atlantic States: 2/														
Delaware---------------	322	12,968	87,542	198,743	23,787	323,362	11,155	9,341	18,173	8,324	6,980	53,973	377,335	0.67
District of Columbia---	54	17,958	98,968	118,370	18,548	253,898	26,598	1,475	52	190	181	28,496	282,394	0.50
Maryland---------------	1,444	50,970	300,591	336,488	68,803	758,296	119,957	12,458	56,520	5,477	447	194,859	953,155	1.70
Virginia---------------	----	10,017	39,277	50,528	5,571	105,393	25,017	150	518	53	2,973	28,711	134,104	0.24
Total	1,820	91,913	526,378	704,129	116,709	1,440,949	182,727	23,424	75,263	14,044	10,581	306,039	1,746,988	3.11
Lake States: 3/														
Illinois---------------	148	3,046	41,953	113,125	3,168	161,440	4,739	25,943	12,319	34,128	34,568	111,697	273,137	0.48
Michigan---------------	237	28,663	126,331	128,152	2,723	286,106	6,050	16,242	----	52,494	13,764	88,550	374,656	0.67
Minnesota--------------	----	156	11,309	38,538	2,843	52,846	1,873	386	----	----	303	2,562	55,408	0.10
Ohio-------------------	54	4,299	6,739	70,046	265	81,403	839	1,119	1,651	2,615	390	6,614	88,017	0.16
Wisconsin--------------	----	1,976	114,027	209,345	29,251	354,599	9,599	2,416	----	145,162	425,355	582,532	937,131	1.66
Total	439	38,140	300,359	559,206	38,250	936,394	23,100	46,106	13,970	234,399	474,380	791,955	1,728,349	3.07
All Other States:-------	308	3,554	19,596	147,253	3,793	174,504	7,354	1,007	844	653	47,369	57,227	231,731	0.41
Total United States	135,347	2,135,246	9,543,475	12,503,798	4,773,985	29,091,851	6,789,393	3,831,493	5,413,909	2,675,992	1,552,651	20,263,438	49,355,289	87.72
Canada:														
Ontario----------------	11,104	500,082	1,249,570	1,073,397	124,164	2,958,317	151,960	89,444	3,404	386	7,366	252,560	3,210,877	5.70
Quebec-----------------	299	98,886	368,888	226,471	22,914	717,458	309,361	167,722	51,006	9,439	9,544	547,072	1,264,530	2.25
Other Provinces--------	----	14,040	27,361	43,766	4,610	89,777	11,122	6,127	84	----	50	17,383	107,160	0.19
Total Canada 4/	11,403	613,008	1,645,819	1,343,634	151,688	3,765,552	472,443	263,293	54,494	9,825	16,960	817,015	4,582,567	8.14
Other Countries: 5/------	----	----	----	----	----	----	----	----	----	----	----	----	2,329,019	4.14
Grand Total 6/	146,750	2,748,254	11,189,294	13,847,432	4,925,673	32,857,403	7,261,836	4,094,786	5,468,403	2,685,817	1,569,611	21,080,453	56,266,875	100.00

1/ Includes "Local Sales."

2/ Total shipments to other states generally referred to as being in the South Atlantic area are included in "All Other States."

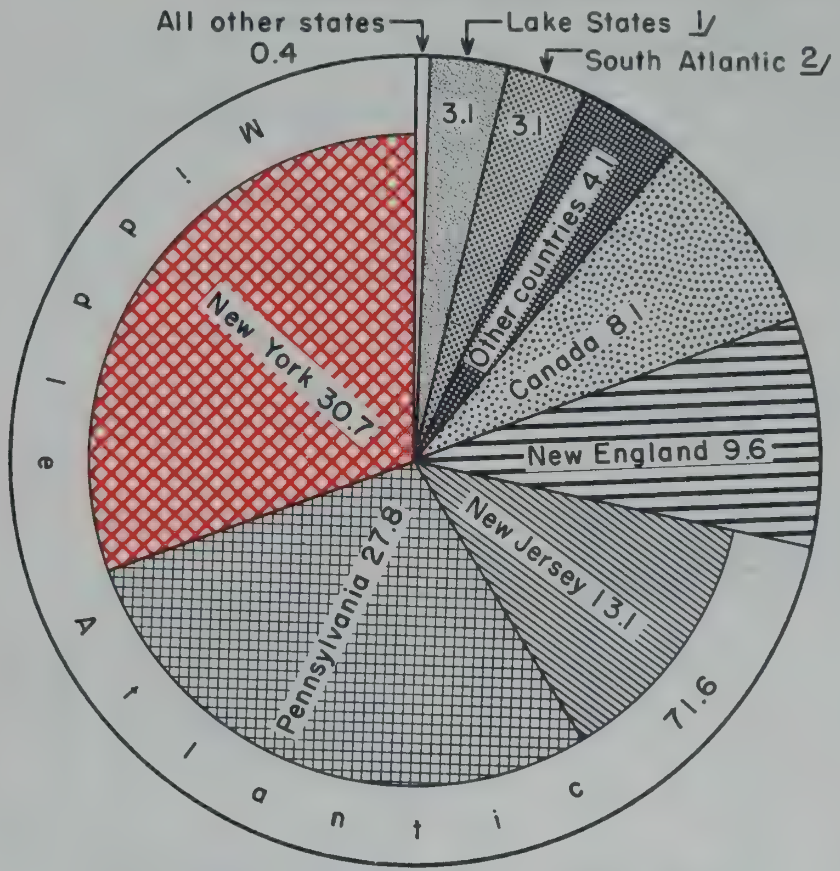
3/ Shipments to Indiana are included in "All Other States."

4/ Shipments reported to final Canadian destinations were as shown--4,582,567 net tons. However, official data of the United States Department of Commerce shows total exports to Canada of 4,665,655 net tons during the 1946-47 coal year.

5/ Compiled from data of the United States Department of Commerce. For countries of destination and an estimated breakdown of this tonnage by size, see table 2 on page 28.

6/ Size totals do not include exports of anthracite to countries other than Canada.

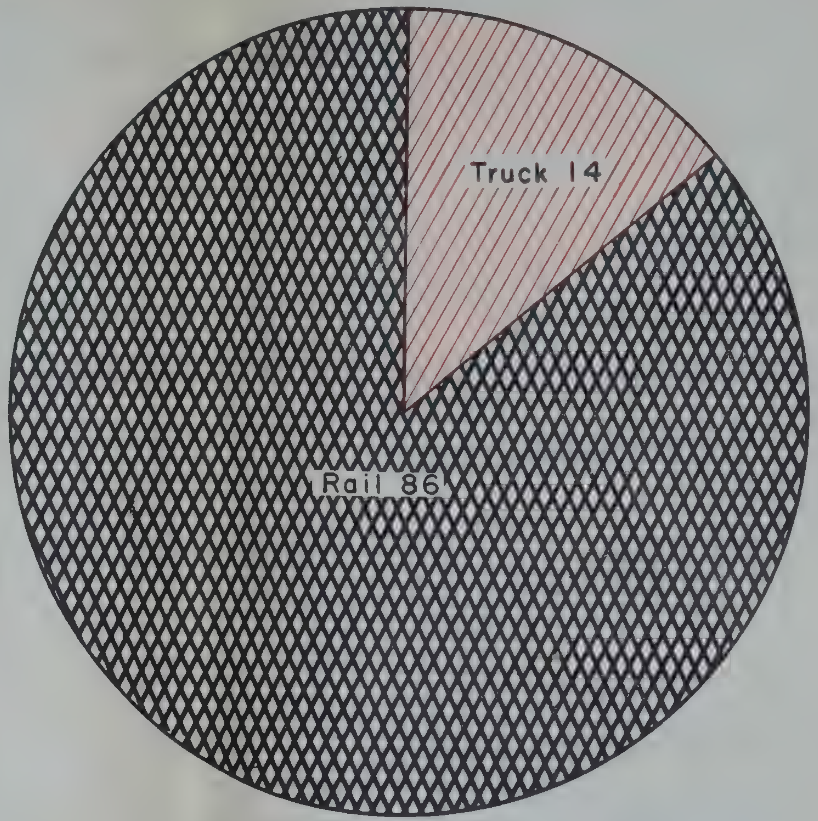
FIG. 1 – PERCENTAGE DISTRIBUTION OF PENNSYLVANIA ANTHRACITE SHIPMENTS BY DESTINATIONS
COAL YEAR 1946-47



100% = 56,266,875 net tons

1/ Includes Illinois, Michigan, Minnesota, Ohio, and Wisconsin.
2/ Includes only Delaware, District of Columbia, Maryland, and Virginia.

FIG. 2 – PERCENTAGE DISTRIBUTION OF PENNSYLVANIA ANTHRACITE SHIPMENTS BY METHOD OF MOVEMENT
COAL YEAR 1946-47

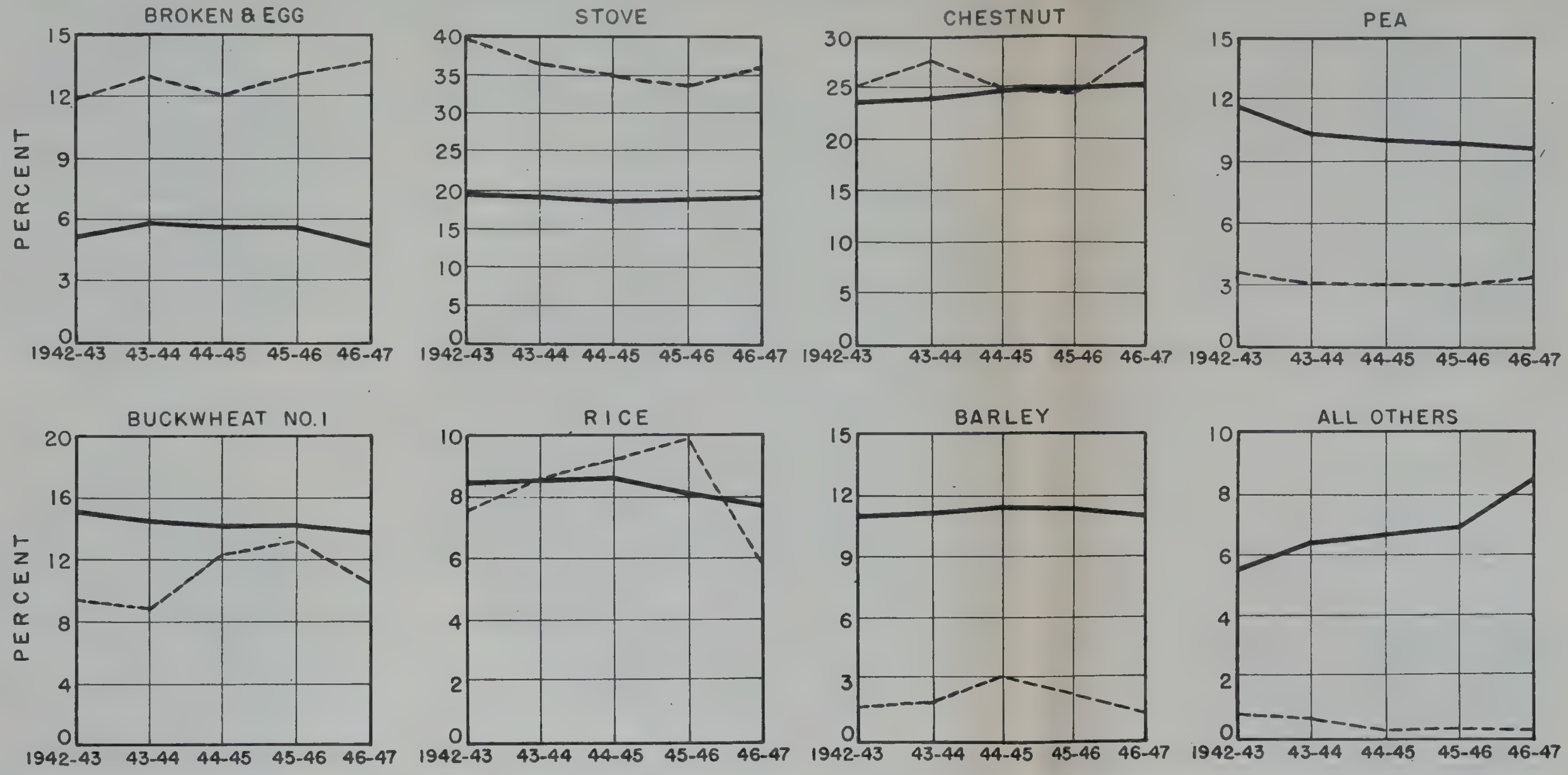


100% = 56,266,875 net tons

Rail – Includes all shipments from the mine by rail, some of which subsequently moved by lake or tidewater.
Truck – Includes "local sales".

FIG. 3

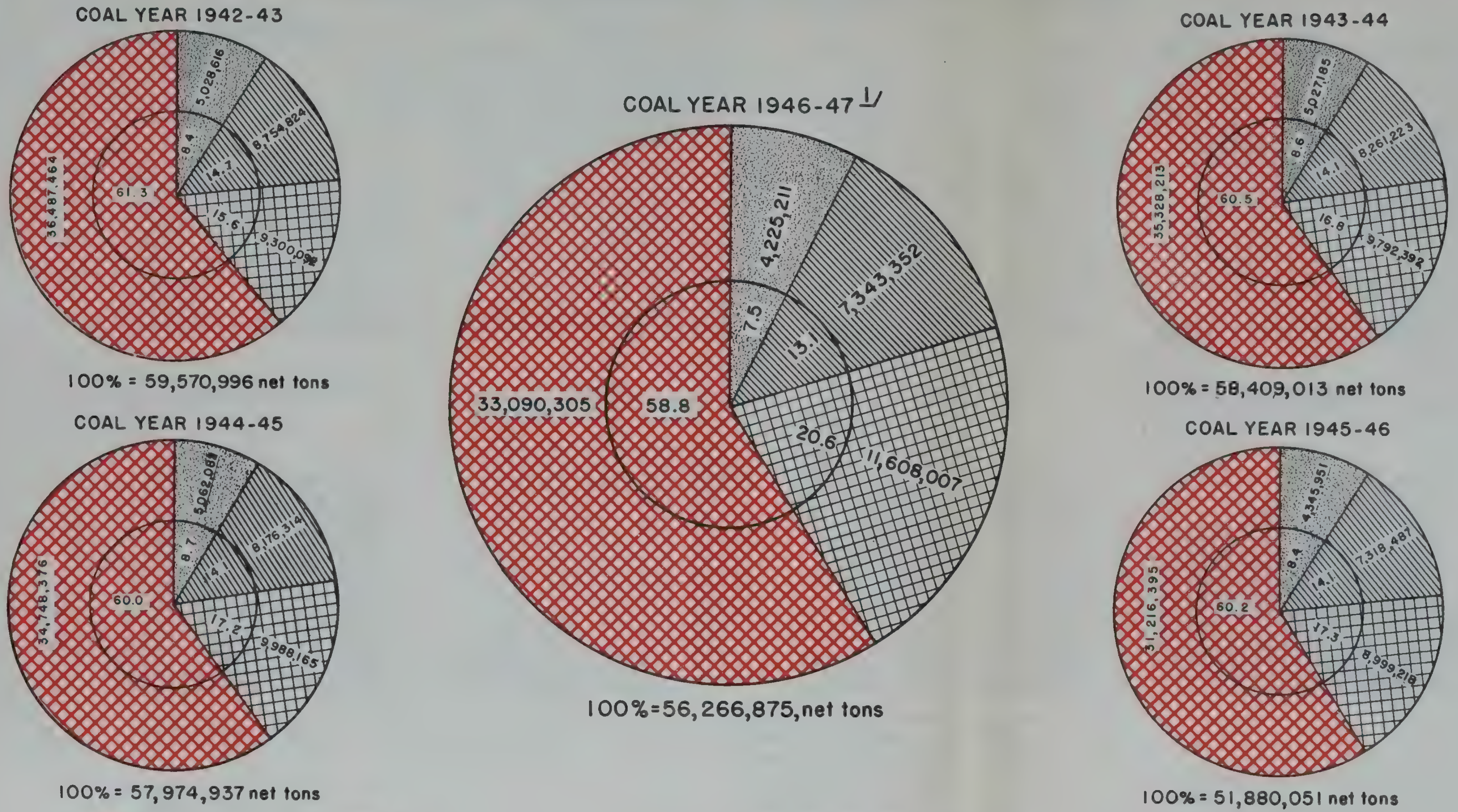
SHIPMENTS OF PENNSYLVANIA ANTHRACITE TO CANADA AND THE UNITED STATES, BY SIZES, IN PERCENT OF TOTAL SHIPMENTS TO EACH COUNTRY FOR THE COAL YEARS IN THE PERIOD APRIL, 1942 TO MARCH, 1947.



Shipments to Canada:
1942-43 – 4,133,706 net tons
1943-44 – 3,563,465 " "
1944-45 – 3,901,097 " "
1945-46 – 3,468,355 " "
1946-47 – 4,582,567 " "

Shipments to the United States:
1942-43 – 55,435,585 net tons
1943-44 – 54,815,912 " "
1944-45 – 54,022,092 " "
1945-46 – 48,379,158 " "
1946-47 – 49,355,289 " "

Fig. 4 - PERCENTAGE DISTRIBUTION OF TOTAL PENNSYLVANIA ANTHRACITE SHIPMENTS BY SIZE GROUPS, FOR THE COAL YEARS IN THE PERIOD, APRIL 1, 1942 TO MARCH 31, 1947.



COAL YEAR 1942-43

COAL YEAR 1943-44

COAL YEAR 1946-47[1]

COAL YEAR 1944-45

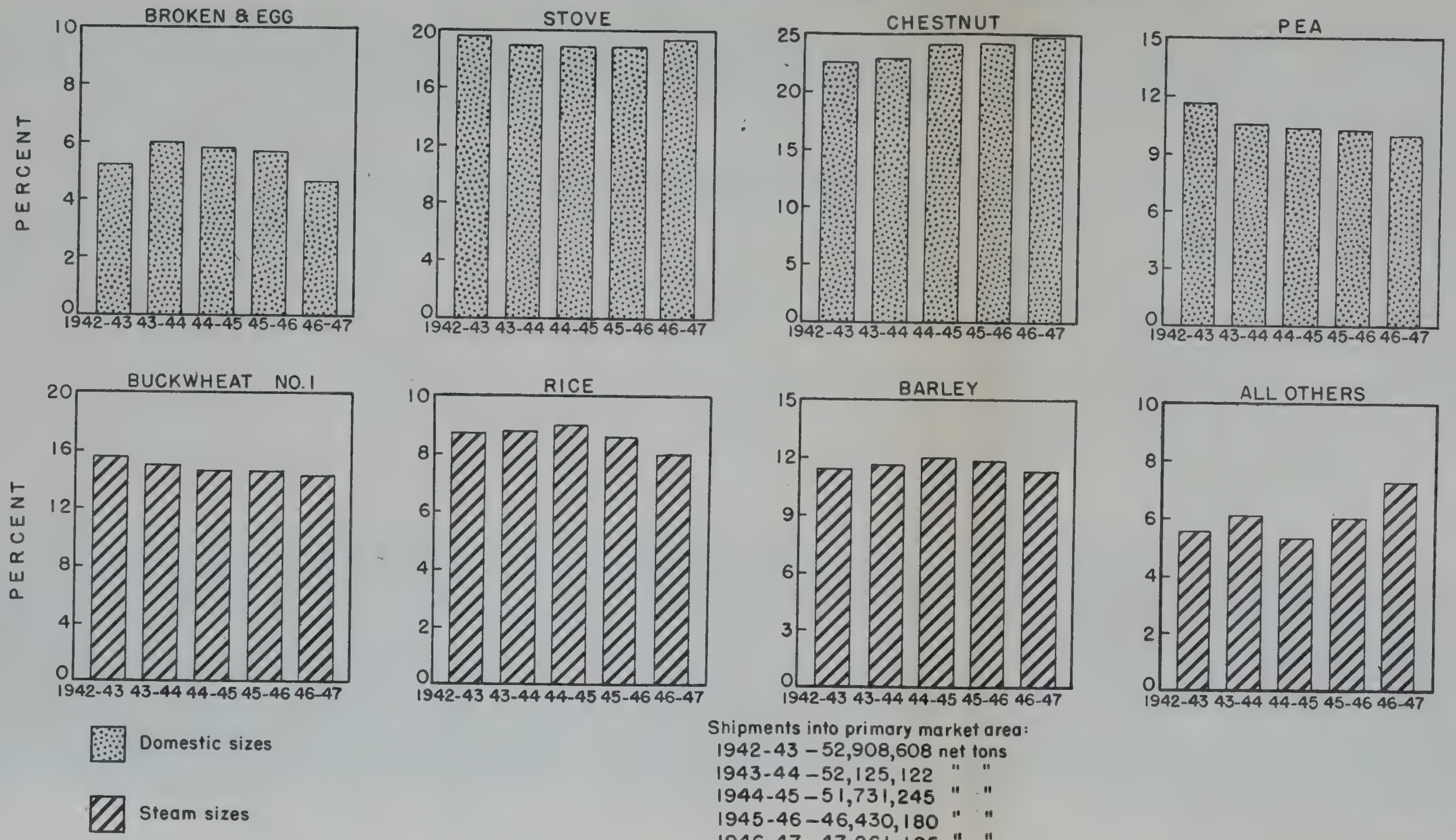
COAL YEAR 1945-46

▩ Domestic
▨ Buckwheat No. 1
▒ Rice
▦ All other

[1] Includes all exports - for size breakdown on exports other than to Canada see table 2.

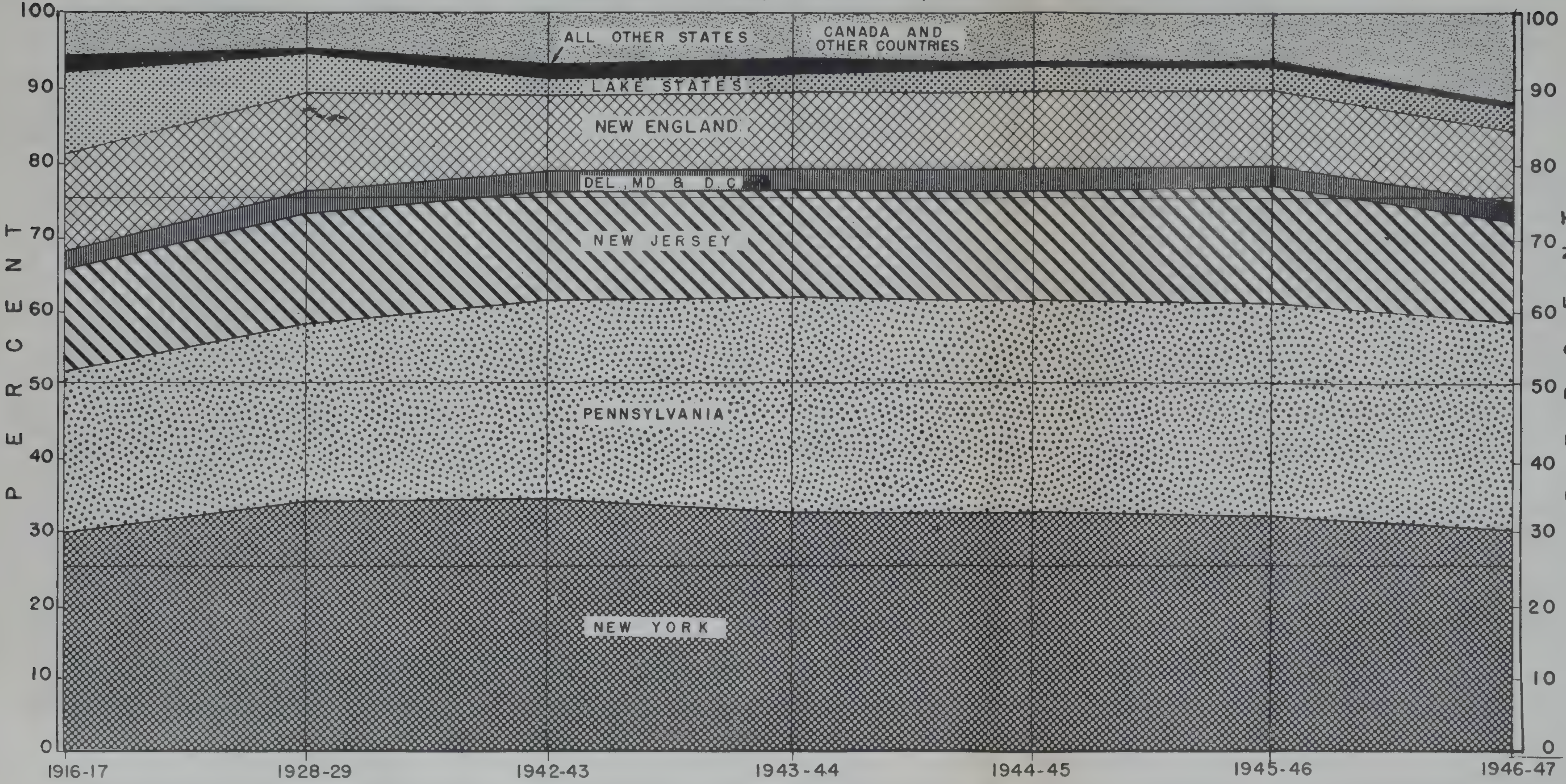
Outside circle shows tonnage for each size group - inside circle, percent of total.

Fig. 5—SHIPMENTS OF PENNSYLVANIA ANTHRACITE INTO THE PRIMARY MARKET AREA BY SIZES, IN PERCENT OF TOTAL SHIPMENTS FOR THE COAL YEARS IN THE PERIOD APRIL, 1942 TO MARCH, 1947.



Shipments into primary market area:
1942-43 – 52,908,608 net tons
1943-44 – 52,125,122 " "
1944-45 – 51,731,245 " "
1945-46 – 46,430,180 " "
1946-47 – 47,261,105 " "

FIG. 6–PERCENTAGE DISTRIBUTION OF PENNSYLVANIA ANTHRACITE BY GEOGRAPHIC AREAS FOR THE COAL YEARS, 1916-1917, 1928-29 AND 1942-47



DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Connecticut:													
Ansonia	----	1,150	5,150	7,255	706	14,261	563	454	----	----	----	1,017	15,278
Bridgeport	----	5,023	54,389	45,119	4,680	109,211	7,230	1,053	657	----	----	8,940	118,151
Bristol	241	487	6,563	6,666	580	14,537	304	170	----	----	----	474	15,011
Danbury	----	1,242	7,683	8,839	1,558	19,322	596	292	----	----	----	888	20,210
Derby	----	400	2,188	3,252	419	6,259	432	263	----	----	----	695	6,954
East Hartford	----	544	3,792	3,000	895	8,231	228	----	----	----	----	228	8,459
Greenwich	----	788	5,716	8,151	932	15,587	3,795	508	----	----	----	4,303	19,890
Groton	----	502	3,373	7,660	991	12,526	1,198	107	----	----	----	1,305	13,831
Hartford	----	9,477	64,098	59,697	8,208	141,480	10,749	9,720	2,997	----	----	23,466	164,946
Manchester	----	913	7,381	7,424	1,065	16,783	547	971	----	----	----	1,518	18,301
Meriden	----	1,967	12,866	10,779	874	26,486	1,415	159	----	----	----	1,574	28,060
Middletown	----	786	5,457	6,404	1,486	14,133	1,059	2,171	----	----	----	3,230	17,363
Naugatuck	----	878	5,501	5,833	737	12,949	514	667	----	----	----	1,181	14,130
New Britain	495	1,915	16,866	18,191	2,099	39,566	2,765	820	----	----	----	3,585	43,151
New Canaan	----	100	2,582	3,509	469	6,660	553	1,667	----	----	----	2,220	8,880
New Haven	153	6,299	52,836	45,185	3,957	108,430	5,049	1,342	1,069	----	----	7,460	115,890
New London	119	486	9,608	15,373	2,452	28,038	2,523	1,961	----	----	----	4,484	32,522
Norwalk	----	1,715	13,966	13,552	1,782	31,015	988	729	----	----	----	1,717	32,732
Norwich	----	610	10,941	17,123	2,311	30,985	3,021	158	----	----	----	3,179	34,164
Southport	----	249	2,915	2,892	372	6,428	1,060	1,374	----	----	----	2,434	8,862
Stamford	----	893	9,397	18,639	2,485	31,414	6,078	921	24,244	----	----	31,243	62,657
Thompsonville	----	824	2,978	3,848	448	8,098	1,344	252	----	----	----	1,596	9,694
Torrington	----	399	5,161	9,649	910	16,119	477	562	----	----	----	1,039	17,158
Wallingford	----	581	3,791	5,383	496	10,251	1,868	----	----	----	----	1,868	12,119
Waterbury	----	3,016	22,459	25,705	2,313	53,493	1,237	1,482	1,202	----	----	3,921	57,414

NEW ENGLAND CONT'D.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Connecticut: continued													
West Haven-------------	----	679	3,781	3,378	492	8,330	117	----	----	----	----	117	8,447
Willimantic------------	----	559	4,641	6,310	726	12,236	1,242	459	----	----	----	1,701	13,937
All other cities-------	52	17,288	112,001	143,654	19,652	292,647	22,416	10,370	2,412	2,121	55	37,374	330,021
State Total 1/	1,060	59,770	458,080	512,470	64,095	1,095,475	79,368	38,632	32,581	2,121	55	152,757	1,248,232
Maine:													
Auburn-----------------	----	810	2,362	1,870	159	5,201	91	41	----	----	----	132	5,333
Augusta----------------	----	2,153	4,883	3,508	546	11,090	1,626	----	----	----	----	1,626	12,716
Bangor-----------------	----	5,401	7,943	6,976	438	20,758	3,902	3,437	----	----	----	7,339	28,097
Bath-------------------	----	1,055	3,111	3,193	544	7,903	537	55	----	389	----	981	8,884
Biddeford--------------	----	1,033	2,143	1,430	----	4,606	362	99	----	----	----	461	5,067
Brunswick--------------	----	696	3,657	3,776	121	8,250	341	50	----	----	----	391	8,641
Gardiner---------------	----	1,528	3,926	3,296	320	9,070	151	----	----	----	----	151	9,221
Lewiston---------------	----	1,964	5,277	3,300	56	10,597	409	232	----	----	----	641	11,238
Portland---------------	----	10,640	39,698	36,822	3,142	90,302	3,033	3,639	----	----	----	6,672	96,974
Rockland---------------	----	680	5,614	8,113	823	15,230	1,214	109	----	----	----	1,323	16,553
All other cities-------	----	22,563	69,476	57,223	3,005	152,267	8,439	4,017	----	389	2,298	15,143	167,410
State Total	----	48,523	148,090	129,507	9,154	335,274	20,105	11,679	----	778	2,298	34,860	370,134
Massachusetts:													
Adams------------------	----	915	3,652	6,756	1,013	12,336	1,423	1,143	----	----	----	2,566	14,902
Athol------------------	----	821	4,488	3,606	270	9,185	275	1,571	----	----	----	1,846	11,031
Beverly----------------	----	2,187	7,180	4,574	437	14,378	1,094	924	----	----	----	2,018	16,396
Boston-----------------	56	92,167	281,401	134,439	9,404	517,467	10,640	5,714	36,226	50,018	3,887	106,485	623,952
Brockton---------------	----	5,309	9,454	4,284	731	19,778	310	345	----	----	----	655	20,433
Cambridge--------------	53	14,931	34,629	23,156	1,443	74,212	1,363	642	12,103	----	----	14,108	88,320
Chelsea----------------	----	3,946	15,976	11,273	601	31,796	344	48	----	----	----	392	32,188

1/ Includes 2,387 tons of coal shipped from the mine by over-the-road truck to final destinations, which was reported in such manner that it was impracticable to remove it from data on rail shipments. This tonnage is broken down by size as follows: 262 tons of Egg, 576 tons of Stove, 875 tons of Chestnut, 234 tons of Pea, 381 tons of Buckwheat No. 1, and 59 tons of Rice coal. Other truck shipments into Connecticut are included in the total for "All Other States."

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Massachusetts: continued													
Chicopee	----	1,619	8,771	8,754	897	20,041	2,901	1,690	----	----	----	4,591	24,632
Everett	----	2,993	7,070	7,204	870	18,137	----	----	----	----	----	----	18,137
Fall River	108	7,593	12,298	8,001	263	28,263	1,313	1,417	----	----	----	2,730	30,993
Fitchburg	----	2,276	9,851	7,703	497	20,327	878	----	----	----	----	878	21,205
Framingham	----	1,287	4,798	3,281	375	9,741	636	631	3,195	----	----	4,462	14,203
Gardner	----	1,423	4,337	4,088	851	10,699	1,315	354	----	----	----	1,669	12,368
Gloucester	----	2,472	6,469	5,607	371	14,919	1,156	3,322	----	----	----	4,478	19,397
Greenfield	----	2,070	7,978	6,627	1,109	17,784	730	1,297	----	----	----	2,027	19,811
Haverhill	----	5,061	12,556	7,290	167	25,074	500	----	----	----	----	500	25,574
Holyoke	----	1,190	10,764	10,809	1,096	23,859	9,148	1,605	907	----	72	11,732	35,591
Lawrence	----	6,079	23,189	13,856	535	43,659	1,355	2,342	----	191	----	3,888	47,547
Leominster	----	1,892	4,737	3,281	318	10,228	796	103	----	----	----	899	11,127
Lowell	108	5,706	22,400	16,118	1,613	45,945	2,276	6,822	----	----	----	9,098	55,043
Lynn	----	12,683	28,885	16,847	773	59,188	1,438	321	----	----	----	1,759	60,947
Malden	----	2,706	10,443	3,132	229	16,510	86	339	----	----	----	425	16,935
Maynard	----	1,383	4,267	2,771	161	8,582	968	----	----	----	439	1,407	9,989
Medford	----	3,215	12,702	5,825	449	22,191	112	----	----	----	----	112	22,303
Melrose	----	2,472	7,260	3,502	345	13,579	167	309	----	----	----	476	14,055
Milford	----	1,339	4,937	3,149	183	9,608	537	576	----	----	----	1,113	10,721
Milton	----	4,007	11,022	3,667	55	18,751	----	115	----	----	----	115	18,866
New Bedford	----	12,137	32,130	16,135	1,386	61,788	1,119	813	----	----	----	1,932	63,720
Newburyport	----	4,164	7,383	5,425	317	17,289	1,243	1,945	----	----	----	3,188	20,477
Newton	----	5,900	10,533	6,143	734	23,310	1,427	238	----	----	----	1,665	24,975
North Adams	----	1,624	7,975	11,063	736	21,398	3,381	2,182	----	----	----	5,563	26,961
Northampton	----	3,882	8,512	6,646	1,046	20,086	8,438	1,392	----	----	----	9,830	29,916

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Massachusetts: continued Norwood----------------	----	2,705	4,956	3,322	261	11,244	442	316	----	----	----	758	12,002
Pittsfield-------------	----	4,816	14,019	27,666	7,696	54,197	20,379	9,331	----	----	----	29,710	83,907
Plymouth---------------	----	1,146	3,623	2,861	280	7,910	193	40	----	----	----	233	8,143
Quincy-----------------	----	8,817	25,570	8,345	606	43,338	375	962	----	----	----	1,337	44,675
Revere-----------------	----	1,745	6,608	2,325	98	10,776	75	----	----	----	----	75	10,851
Salem------------------	----	9,761	35,184	13,701	268	58,914	1,132	46	----	----	----	1,178	60,092
Somerville-------------	----	7,382	25,880	11,326	449	45,037	559	----	----	----	----	559	45,596
Southbridge------------	----	851	3,508	2,332	206	6,897	820	329	----	----	----	1,149	8,046
Springfield------------	----	5,135	52,500	39,282	5,410	102,327	7,521	2,345	14,406	----	----	24,272	126,599
Taunton----------------	----	5,222	6,450	4,013	533	16,218	371	932	----	----	----	1,303	17,521
Waltham----------------	----	3,401	13,755	7,649	779	25,584	1,319	2,297	----	----	----	3,616	29,200
Wellesley--------------	----	4,866	7,991	4,944	517	18,318	443	506	----	----	----	949	19,267
Westfield--------------	----	665	5,911	6,570	911	14,057	1,053	638	----	----	----	1,691	15,748
West Springfield-------	----	437	5,875	4,645	577	11,534	1,127	518	4,580	----	----	6,225	17,759
Woburn-----------------	----	1,956	9,507	3,680	372	15,515	----	91	----	----	----	91	15,606
Worcester--------------	1,058	10,443	46,593	28,937	4,106	91,137	4,937	8,578	17,584	----	----	31,099	122,236
All other cities-------	----	90,551	285,677	204,903	20,028	601,159	40,855	24,277	28,206	479	16	93,833	694,992
State Total	1,383	377,348	1,191,654	751,513	72,372	2,394,270	138,970	89,406	117,207	50,688	4,414	400,685	2,794,955
New Hampshire: Berlin-----------------	----	102	3,151	2,196	172	5,621	1,577	1,087	65,888	----	----	68,552	74,173
Claremont--------------	----	106	3,497	2,018	105	5,726	1,012	268	73	----	----	1,353	7,079
Concord----------------	----	3,944	12,016	5,730	435	22,125	1,156	4,264	----	----	----	5,420	27,545
Dover------------------	----	1,430	3,197	3,110	54	7,791	151	157	----	----	----	308	8,099
Keene------------------	----	2,232	6,784	4,410	827	14,253	3,459	598	----	----	----	4,057	18,310
Manchester-------------	----	5,161	13,094	12,694	1,614	32,563	3,181	794	1,947	----	----	5,922	38,485

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New Hampshire: continued													
Nashua------------------	----	2,253	4,448	3,207	492	10,400	776	44	----	109	----	929	11,329
Portsmouth--------------	----	2,984	8,489	6,227	756	18,456	2,218	1,345	----	----	----	3,563	22,019
All other cities-------	----	17,017	54,741	44,437	2,798	118,993	12,537	7,612	18,642	711	----	39,502	158,495
State Total	----	35,229	109,417	84,029	7,253	235,928	26,067	16,169	86,550	820	----	129,606	365,534
Rhode Island:													
Cranston----------------	----	5,094	18,187	13,874	1,193	38,348	1,847	1,072	----	----	----	2,919	41,267
East Providence---------	----	1,049	2,009	1,468	320	4,846	600	257	----	----	----	857	5,703
Newport-----------------	----	3,381	14,607	13,242	1,557	32,787	7,692	1,347	----	----	----	9,039	41,826
Pawtucket---------------	----	3,219	21,649	19,155	1,444	45,467	1,366	483	----	----	----	1,849	47,316
Providence--------------	----	8,175	55,990	32,506	3,797	100,468	2,757	6,845	----	----	----	9,602	110,070
Wakefield---------------	----	748	3,094	4,188	934	8,964	663	130	----	----	----	793	9,757
Westerly----------------	----	1,395	5,822	6,675	633	14,525	1,240	58	----	----	----	1,298	15,823
West Warwick------------	----	1,038	2,622	2,551	348	6,559	236	377	----	----	----	613	7,172
Woonsocket--------------	----	921	2,388	2,233	268	5,810	165	217	----	----	----	382	6,192
All other cities-------	----	5,994	23,191	19,819	2,478	51,482	2,032	1,050	----	----	9	3,091	54,573
State Total	----	31,014	149,559	115,711	12,972	309,256	18,598	11,836	----	----	9	30,443	339,699
Vermont:													
Barre-------------------	----	1,107	4,497	4,317	669	10,590	1,417	2,673	----	----	----	4,090	14,680
Bennington--------------	----	2,284	5,269	4,088	1,327	12,968	3,141	2,325	----	----	----	5,466	18,434
Brattleboro-------------	----	1,910	4,186	3,909	700	10,705	1,162	5,090	52	----	----	6,304	17,009
Burlington--------------	----	2,509	14,875	9,576	1,880	28,840	10,384	679	----	----	----	11,063	39,903
Montpelier--------------	----	948	4,161	2,896	88	8,093	1,923	1,185	----	----	----	3,108	11,201
Rutland-----------------	174	1,248	12,073	10,212	1,440	25,147	2,714	595	----	----	----	3,309	28,456
St. Albans--------------	----	650	3,688	3,633	1,090	9,061	2,187	45	----	----	----	2,232	11,293
St. Johnsbury-----------	----	478	3,102	2,699	94	6,373	660	384	----	----	----	1,044	7,417

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Vermont: continued All other cities-------	338	10,338	57,506	42,374	3,024	113,580	16,709	2,862	20,400	590	----	40,561	154,141
State Total	512	21,472	109,357	83,704	10,312	225,357	40,297	15,838	20,452	590	----	77,177	302,534

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	Total All Sizes
New Jersey:													
Asbury Park------------	----	622	6,116	8,335	2,283	17,356	2,871	851	66	----	----	3,788	21,144
Atlantic City----------	----	1,554	16,211	41,466	13,412	72,643	34,695	36,803	116,976	612	1,723	190,809	263,452
Bayonne----------------	----	1,134	9,623	18,326	6,101	35,184	6,865	2,393	12,378	----	----	21,636	56,820
Belleville-------------	----	62	6,483	13,487	5,078	25,110	2,007	603	----	----	----	2,610	27,720
Belmar-----------------	----	----	3,426	5,905	1,044	10,375	847	725	----	----	----	1,572	11,947
Bergenfield------------	----	48	3,215	6,755	1,913	11,931	1,038	1,102	----	----	----	2,140	14,071
Bloomfield-------------	----	1,201	10,854	24,299	6,429	42,783	15,339	8,103	----	----	----	23,442	66,225
Boonton----------------	----	264	3,512	7,561	1,528	12,865	2,990	1,007	101	----	----	4,098	16,963
Bordentown-------------	----	445	2,354	6,510	2,056	11,365	911	367	----	----	----	1,278	12,643
Bound Brook------------	----	237	3,880	8,947	4,255	17,319	2,078	7,921	23,330	125,897	268	159,494	176,813
Bridgeton--------------	----	704	10,486	16,426	3,235	30,851	4,445	4,870	----	----	----	9,315	40,166
Burlington-------------	52	697	4,315	7,202	2,499	14,765	1,055	605	----	----	----	1,660	16,425
Caldwell---------------	----	436	1,377	5,097	1,406	8,316	1,418	636	----	----	----	2,054	10,370
Camden-----------------	----	2,595	27,276	37,230	9,469	76,570	10,687	2,113	4,763	222	801	18,586	95,156
Carteret---------------	----	----	2,586	8,201	2,429	13,216	1,253	2,696	6,500	222	743	11,414	24,630
Clifton----------------	----	907	6,150	9,762	3,587	20,406	3,464	12,838	38,643	----	----	54,945	75,351
Collingswood-----------	----	643	10,194	11,639	3,014	25,490	1,491	127	----	----	----	1,618	27,108
Cranford---------------	----	329	3,024	5,207	2,410	10,970	1,497	907	----	----	----	2,404	13,374
Dover------------------	55	6,649	5,673	13,423	3,946	29,746	3,436	2,303	----	----	----	5,739	35,485
East Orange------------	----	2,004	14,085	28,894	7,005	51,988	8,578	2,960	----	----	----	11,538	63,526
Eatontown--------------	----	53	1,102	10,882	860	12,897	3,775	854	----	----	----	4,629	17,526
Edgewater--Bergen Co.--	----	378	2,955	4,728	1,350	9,411	18,414	16,803	19,112	----	----	54,329	63,740
Elizabeth--------------	----	10,395	33,185	63,291	13,825	120,696	14,823	4,537	34,066	5,752	----	59,178	179,874
Englewood--------------	----	1,484	9,050	12,015	4,561	27,110	15,992	6,158	----	----	----	22,150	49,260
Freehold---------------	----	523	3,457	5,235	1,040	10,255	1,076	1,749	----	----	----	2,825	13,080

MIDDLE ATLANTIC CONT'D.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New Jersey: continued													
Garfield----------------	----	508	7,587	13,911	4,649	26,655	4,318	1,108	12,341	----	----	17,767	44,422
Gloucester-------------	----	284	6,159	7,196	2,087	15,726	730	----	----	----	----	730	16,456
Hackensack-------------	----	917	8,397	14,038	6,149	29,501	5,360	5,456	----	----	----	10,816	40,317
Haddonfield------------	----	367	5,983	7,204	3,020	16,574	1,627	386	----	----	----	2,013	18,587
Harrison---------------	----	1,355	15,184	32,633	6,615	55,787	8,961	2,596	18,265	----	----	29,822	85,609
Hawthorne--------------	----	463	3,456	5,354	1,461	10,734	739	1,102	----	----	----	1,841	12,575
Hoboken----------------	----	9,218	26,803	27,366	17,449	80,836	79,819	35,531	706	----	----	116,056	196,892
Irvington--------------	----	2,738	20,959	53,501	8,728	85,926	10,047	7,251	----	----	----	17,298	103,224
Jersey City------------	----	9,754	57,791	95,025	52,812	215,382	132,987	89,218	146,672	6,670	2,282	377,829	593,211
Kearny-----------------	----	----	960	6,258	1,073	8,291	29,837	20,913	8,458	11,773	----	70,981	79,272
Lakewood---------------	----	107	4,709	6,553	1,505	12,874	2,262	1,305	----	----	----	3,567	16,441
Linden-----------------	----	176	1,283	6,310	1,182	8,951	593	1,152	----	----	----	1,745	10,696
Long Branch------------	----	383	6,983	17,126	3,872	28,364	3,590	518	----	----	----	4,108	32,472
Madison----------------	----	150	1,450	2,636	391	4,627	4,582	----	----	----	----	4,582	9,209
Maplewood--------------	----	151	3,346	10,537	2,809	16,843	1,313	1,645	----	----	----	2,958	19,801
Millville--------------	----	389	4,442	7,194	1,358	13,383	590	----	48	----	----	638	14,021
Montclair--------------	----	3,205	10,871	15,323	4,489	33,888	7,780	8,335	121	----	----	16,236	50,124
Morristown-------------	----	1,620	10,975	21,389	3,791	37,775	5,654	5,073	----	----	----	10,727	48,502
Mount Holly------------	----	554	3,730	5,341	2,493	12,118	1,830	343	----	----	----	2,173	14,291
Newark-----------------	----	9,853	75,498	155,463	37,201	278,015	63,417	45,433	45,453	13,905	----	168,208	446,223
New Brunswick----------	----	593	6,787	20,254	5,852	33,486	6,083	4,483	----	----	----	10,566	44,052
North Bergen-----------	----	678	7,302	16,612	7,710	32,302	8,613	4,665	----	----	----	13,278	45,580
Nutley-----------------	----	----	3,347	6,243	1,569	11,159	2,468	1,679	----	----	----	4,147	15,306
Orange-----------------	----	2,324	18,038	33,397	7,618	61,377	14,554	5,795	----	----	----	20,349	81,726
Palisades Park---------	----	607	1,993	1,812	2,447	6,859	13,869	947	----	----	----	14,816	21,675

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 to MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New Jersey: continued													
Passaic----------------	----	659	6,596	14,076	2,500	23,831	3,154	6,780	65,735	----	----	75,669	99,500
Paterson---------------	----	2,664	46,890	89,890	15,381	154,825	23,717	31,933	32,426	----	----	88,076	242,901
Perth Amboy------------	1,802	1,287	11,673	24,560	8,893	48,215	7,331	3,999	7,483	87	167	19,067	67,282
Phillipsburg-----------	4,744	314	5,010	12,097	5,233	27,398	4,733	8,830	31,609	13,832	----	59,004	86,402
Plainfield-------------	----	1,666	14,888	31,722	11,126	59,402	11,008	7,900	5,289	----	----	24,197	83,599
Pleasantville----------	----	517	5,205	10,977	2,870	19,569	1,354	739	603	----	----	2,696	22,265
Port Reading-----------	----	390	987	2,455	1,130	4,962	9,436	15,378	10,715	----	----	35,529	40,491
Princeton--------------	----	266	5,216	4,708	2,032	12,222	4,305	2,481	6,734	----	----	13,520	25,742
Rahway-----------------	----	564	6,873	9,673	3,714	20,824	1,369	698	256	----	----	2,323	23,147
Red Bank---------------	----	702	7,808	12,327	2,984	23,821	2,793	322	----	----	----	3,115	26,936
Ridgefield-------------	----	100	3,525	6,620	2,593	12,838	2,168	828	1,097	----	----	4,093	16,931
Ridgefield Park--------	----	167	1,052	2,920	1,336	5,475	589	646	2,704	----	----	3,939	9,414
Rutherford-------------	----	795	4,538	7,432	2,837	15,602	6,499	1,332	----	----	----	7,831	23,433
Somerville-------------	----	308	1,412	5,549	2,229	9,498	1,395	1,159	----	----	----	2,554	12,052
South Amboy------------	----	150	3,231	4,106	1,740	9,227	870	118	----	----	----	988	10,215
South Orange-----------	----	1,154	7,275	19,146	3,003	30,578	6,058	3,184	----	----	----	9,242	39,820
Springfield------------	----	158	2,008	2,556	663	5,385	2,488	2,136	----	----	----	4,624	10,009
Summit-----------------	----	550	4,921	9,017	2,402	16,890	5,556	7,442	57	----	----	13,055	29,945
Trenton----------------	----	4,938	42,415	92,216	26,912	166,481	12,893	20,677	55,251	28,692	----	117,513	283,994
Verona-----------------	----	107	3,061	4,646	1,793	9,607	1,634	3,366	605	----	----	5,605	15,212
Vineland---------------	----	197	6,534	18,129	3,073	27,933	2,045	----	----	----	----	2,045	29,978
Weehawken--------------	----	262	4,030	5,933	3,306	13,531	8,275	915	----	----	----	9,190	22,721
Westfield--------------	----	465	2,881	4,299	1,949	9,594	2,847	3,258	197	----	----	6,302	15,896
West Orange------------	----	162	3,664	5,033	1,207	10,066	956	539	----	----	----	1,495	11,561
Woodbridge-------------	----	106	1,875	4,237	1,192	7,410	868	543	2,843	----	----	4,254	11,664

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New Jersey: continued													
Woodbury	----	98	2,044	2,965	618	5,725	383	137	----	----	----	520	6,245
All other cities	2,438	26,077	253,371	514,150	152,726	948,762	212,790	152,904	483,479	191,109	109,560	1,149,842	2,098,604
Total rail shipments 1/	9,091	124,581	973,605	1,890,938	558,507	3,556,722	910,182	643,209	1,195,082	398,773	115,544	3,262,790	6,819,512
Total truck shipments 2/	----	14,495	127,518	266,444	61,405	469,862	33,048	21,983	7,269	----	----	62,300	532,162
State Total	9,091	139,076	1,101,123	2,157,382	619,912	4,026,584	943,230	665,192	1,202,351	398,773	115,544	3,325,090	7,351,674
New York:													
Albany	----	4,785	76,525	65,442	24,029	170,781	56,823	14,217	2,315	----	----	73,355	244,136
Amsterdam	----	2,403	17,300	29,493	4,770	53,966	6,668	2,861	151,618	1,114	----	162,261	216,227
Auburn	----	5,366	19,248	17,104	5,680	47,398	9,826	8,638	----	----	----	18,464	65,862
Babylon, L. I.	----	682	9,015	11,093	2,016	22,806	3,317	566	----	----	----	3,883	26,689
Baldwin, L. I.	----	139	3,144	5,270	1,564	10,117	872	823	----	----	----	1,695	11,812
Batavia	----	2,102	8,881	5,182	1,400	17,565	2,028	1,518	----	----	----	3,546	21,111
Binghamton	10,944	6,431	34,816	29,501	14,743	96,435	37,204	24,310	19,705	2,327	----	83,546	179,981
Buffalo	53	64,955	274,829	165,326	19,414	524,577	42,206	11,916	179	2,012	64,496	120,809	645,386
Canandaigua	----	2,589	8,629	6,171	2,045	19,434	1,377	2,515	306	----	----	4,198	23,632
Catskill	----	245	4,079	5,828	967	11,119	2,678	2,399	----	----	----	5,077	16,196
Cohoes	----	1,141	7,139	11,599	1,653	21,532	1,809	71	109	----	----	1,989	23,521
Corning	----	1,804	7,662	5,368	1,072	15,906	892	1,076	40	----	----	2,008	17,914
Cortland	----	1,582	6,598	5,921	2,873	16,974	4,282	5,288	----	----	----	9,570	26,544
Dunkirk	----	1,141	4,712	5,246	569	11,668	120	50	----	----	----	170	11,838
Elmira	181	10,135	34,784	27,343	8,651	81,094	13,097	9,546	1,233	----	----	23,876	104,970
Endicott	----	874	5,609	8,513	6,411	21,407	3,787	5,393	----	----	----	9,180	30,587
Floral Park, L. I.	----	99	5,108	6,034	1,490	12,731	3,529	361	----	----	----	3,890	16,621
Freeport, L. I.	----	513	9,819	15,753	2,869	28,954	2,057	1,524	242	----	----	3,823	32,777
Fulton	----	2,534	5,663	4,890	1,591	14,678	2,058	1,929	91	----	----	4,078	18,756

1/ Includes 27,686 tons of coal shipped from the mine by over-the-road truck to final destinations, which was reported in such manner that it was impracticable to remove it from data on rail shipments. This tonnage is broken down by size as follows: 779 tons of Egg, 5,896 tons of Stove, 14,117 tons of Chestnut, 3,242 tons of Pea, 2,358 tons of Buckwheat No. 1 and 1,294 tons of Rice coal.

2/ To obtain actual truck shipments for New Jersey add the 27,686 tons indicated in footnote 1/ to this total, or see page 27 of this report.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New York: continued													
Geneva----------------	----	2,453	12,405	12,794	4,146	31,798	4,623	5,908	----	----	----	10,531	42,329
Glens Falls------------	----	1,517	13,032	13,628	3,247	31,424	7,448	5,725	63,971	----	1,786	78,930	110,354
Gloversville-----------	95	3,300	11,814	10,753	3,853	29,815	2,939	1,511	2,204	----	----	6,654	36,469
Hornell----------------	----	489	4,576	3,428	526	9,019	662	489	----	----	----	1,151	10,170
Hudson-----------------	----	1,409	9,643	10,847	1,756	23,655	7,179	4,703	----	----	----	11,882	35,537
Huntington, L. I.------	----	1,465	9,914	13,662	2,765	27,806	2,308	549	----	----	----	2,857	30,663
Ilion------------------	----	1,788	5,976	4,088	1,700	13,552	1,886	1,295	11,553	----	----	14,734	28,286
Ithaca-----------------	----	3,132	14,563	15,337	6,341	39,373	12,802	6,436	26,085	----	----	45,323	84,696
Jamestown--------------	----	1,377	11,720	7,876	1,332	22,305	610	1,953	----	----	----	2,563	24,868
Johnstown--------------	98	2,003	9,101	7,960	2,801	21,963	2,828	728	----	----	----	3,556	25,519
Kingston---------------	----	3,848	16,246	16,266	4,958	41,318	3,759	3,506	92	288	661	8,306	49,624
Lackawanna-------------	----	5,100	20,326	9,679	1,449	36,554	1,257	126	1,618	----	534	3,535	40,089
Little Falls-----------	----	1,371	4,123	4,758	897	11,149	1,579	473	----	----	----	2,052	13,201
Lockport---------------	----	4,830	17,669	11,992	2,284	36,775	2,118	690	----	----	----	2,808	39,583
Malone-----------------	----	706	4,667	4,149	330	9,852	2,164	759	----	----	----	2,923	12,775
Mamaroneck-------------	----	1,418	4,186	4,941	1,931	12,476	1,406	590	----	----	----	1,996	14,472
Massena----------------	----	1,923	6,823	6,561	1,085	16,392	1,686	845	----	----	----	2,531	18,923
Medina-----------------	----	1,807	6,084	4,432	1,435	13,758	1,796	1,886	----	----	----	3,682	17,440
Middletown-------------	----	955	9,729	10,297	2,956	23,937	3,925	3,935	----	22,524	----	30,384	54,321
Mineola, L. I.---------	----	550	14,303	21,238	4,994	41,085	16,333	1,191	----	----	----	17,524	58,609
Mount Vernon-----------	----	5,305	23,830	22,604	6,589	58,328	28,885	7,027	----	----	----	35,912	94,240
Newark-----------------	----	2,213	6,690	5,335	1,529	15,767	1,133	6,744	55	----	----	7,932	23,699
Newburgh---------------	----	1,806	13,692	21,854	10,230	47,582	6,867	4,742	97	----	----	11,706	59,288
New Hyde Park, L. I.---	----	1,695	16,687	27,442	7,239	53,063	6,721	2,069	----	----	----	8,790	61,853
New Rochelle-----------	----	1,455	7,883	8,455	2,237	20,030	4,169	659	----	----	----	4,828	24,858

MIDDLE ATLANTIC CONT'D.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New York: continued													
New York City----------	9,341	479,147	1,297,998	1,123,514	590,835	3,500,835	2,734,760	649,052	605,393	45,787	32,159	4,067,151	7,567,986
Niagara Falls----------	----	8,125	36,104	29,175	9,913	83,317	16,464	21,505	41,313	52	62	79,396	162,713
North Tonawanda--------	----	885	10,251	14,521	4,024	29,681	1,495	974	----	----	----	2,469	32,150
Norwich----------------	----	760	4,531	4,168	1,482	10,941	3,311	1,848	----	----	----	5,159	16,100
Oneida-----------------	----	3,869	9,019	6,249	2,776	21,913	3,686	1,578	----	----	----	5,264	27,177
Oneonta----------------	----	1,514	9,406	11,642	2,637	25,199	6,750	6,342	125	----	----	13,217	38,416
Ossining---------------	----	----	1,666	2,478	952	5,096	702	157	----	----	----	859	5,955
Oswego-----------------	----	5,490	17,767	15,946	4,467	43,670	7,076	4,616	94	----	----	11,786	55,456
Patchogue, L. I.-------	----	1,706	6,981	8,639	1,312	18,638	2,326	916	----	----	----	3,242	21,880
Peekskill--------------	----	308	8,533	10,836	1,655	21,332	2,148	1,248	----	----	----	3,396	24,728
Penn Yan---------------	----	526	4,803	5,094	1,908	12,331	1,082	2,367	----	----	----	3,449	15,780
Plattsburg-------------	----	368	5,213	5,713	1,016	12,310	7,098	2,137	490	----	----	9,725	22,035
Port Chester-----------	----	1,948	7,598	12,252	2,013	23,811	1,808	536	----	----	----	2,344	26,155
Port Jervis------------	----	217	5,796	10,808	4,238	21,059	5,266	2,531	2,113	----	----	9,910	30,969
Poughkeepsie-----------	----	3,911	28,202	25,892	6,698	64,703	11,388	13,261	----	----	----	24,649	89,352
Rochester--------------	61	63,781	219,574	121,685	45,194	450,295	34,529	29,828	170	----	740	65,267	515,562
Rome-------------------	47	8,645	20,263	15,155	10,129	54,239	11,648	2,370	----	----	----	14,018	68,257
Saranac Lake-----------	----	605	5,026	5,269	1,126	12,026	4,664	697	----	----	----	5,361	17,387
Saratoga Springs-------	----	1,464	9,075	10,163	2,927	23,629	8,337	7,062	52	----	----	15,451	39,080
Schenectady------------	----	3,248	53,678	84,006	26,849	167,781	34,210	11,978	406	----	----	46,594	214,375
Scotia-----------------	----	48	5,442	7,266	3,060	15,816	4,036	12,827	----	----	----	16,863	32,679
Seneca Falls-----------	47	1,398	4,635	5,319	1,530	12,929	1,034	765	----	----	----	1,799	14,728
Syracuse---------------	159	41,991	158,394	79,733	36,401	316,678	66,043	54,283	2,145	----	4	122,475	439,153
Tarrytown--------------	----	1,510	8,964	9,294	1,392	21,160	1,987	957	----	----	----	2,944	24,104
Tonawanda--------------	----	2,468	10,706	7,209	2,499	22,882	2,704	1,901	----	----	----	4,605	27,487

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
New York: continued:													
Troy-------------------	----	10,967	35,017	47,030	8,948	101,962	16,777	14,398	20,424	----	----	51,599	153,561
Utica------------------	----	14,376	52,172	33,071	10,745	110,364	35,907	14,327	12,484	----	----	62,718	173,082
Watertown--------------	----	6,176	19,213	14,059	4,937	44,385	9,321	3,832	198	48	----	13,399	57,784
Watervliet-------------	----	1,375	5,573	7,672	1,625	16,245	923	318	2,419	----	----	3,660	19,905
White Plains-----------	----	2,406	15,333	14,630	3,253	35,622	5,370	1,046	----	----	----	6,416	42,038
Yonkers----------------	----	10,491	36,859	40,397	12,675	100,422	23,825	1,966	----	----	----	25,791	126,213
All other cities-------	4,149	224,773	985,963	1,176,565	302,227	2,693,677	378,489	251,137	233,889	163,498	158,409	1,185,422	3,879,099
Total rail shipments 1/	25,175	1,067,931	3,918,997	3,676,903	1,293,860	9,982,866	3,766,877	1,278,300	1,203,228	237,650	258,851	6,744,906	16,727,772
Total truck shipments 2/	----	4,340	149,000	239,761	74,460	467,561	42,323	15,079	160	----	----	57,562	525,123
State Total	25,175	1,072,271	4,067,997	3,916,664	1,368,320	10,450,427	3,809,200	1,293,379	1,203,388	237,650	258,851	6,802,468	17,252,895
Pennsylvania:													
Allentown--------------	----	914	6,716	35,625	39,496	82,751	32,422	31,364	31,847	51,791	1,258	148,682	231,433
Ardmore----------------	----	1,423	6,326	7,638	2,768	18,155	4,567	776	----	----	----	5,343	23,498
Bangor-----------------	----	25	794	7,091	4,639	12,549	3,604	814	----	----	----	4,418	16,967
Bethlehem--------------	----	949	10,301	31,944	25,433	68,627	18,505	23,052	183,763	9,311	14,026	248,657	317,284
Bridgeport-------------	----	----	1,636	4,146	3,832	9,614	27,387	1,565	21,264	27,274	----	77,490	87,104
Bristol----------------	----	184	2,590	7,162	1,927	11,863	722	----	1,102	12,657	43	14,524	26,387
Carlisle---------------	1,449	852	3,151	3,404	1,510	10,366	1,851	1,920	668	----	----	4,439	14,805
Chester----------------	----	857	12,269	25,807	6,413	45,346	2,876	3,181	6,245	6,073	----	18,375	63,721
Coatesville------------	----	726	5,027	9,400	2,605	17,758	2,198	1,629	----	----	----	3,827	21,585
Columbia---------------	1,048	8,177	2,957	6,096	5,159	23,437	2,073	6,699	1,201	----	----	9,973	33,410
Easton-----------------	----	14,982	10,075	22,140	10,699	57,896	14,578	26,593	4,669	----	----	45,840	103,736
Elkins Park------------	----	1,778	7,696	15,121	6,748	31,343	5,337	2,641	----	----	53	8,031	39,374
Ephrata----------------	----	164	1,790	3,604	2,440	7,998	2,446	832	176	----	----	3,454	11,452
Erie-------------------	----	23,302	34,308	13,387	743	71,740	2,291	2,284	----	12	----	4,587	76,327

1/ Includes 6,386 tons of coal shipped from the mine by over-the-road truck to final destinations, which was reported in such manner that it was impracticable to remove it from data on rail shipments. This tonnage is broken down by size as follows: 152 tons of Egg, 1,919 tons of Stove, 2,475 tons of Chestnut, 255 tons of Pea, 1,391 tons of Buckwheat No. 1, and 194 tons of Rice coal.

2/ To obtain actual truck shipments for New York add the 6,386 tons indicated in footnote 1/ to this total, or see page 27 of this report.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Pennsylvania: continued													
Hanover	----	312	3,006	4,210	1,045	8,573	1,365	496	----	----	----	1,861	10,434
Harrisburg	----	4,641	13,301	17,795	9,367	45,104	9,080	8,391	841	95,892	----	114,204	159,308
Lancaster	11,818	3,980	17,101	24,958	13,499	71,356	13,504	8,517	61,931	----	----	83,952	155,308
Lansdale	----	264	2,221	5,121	4,186	11,792	1,443	705	536	----	----	2,684	14,476
Lebanon	----	585	3,400	5,517	3,773	13,275	7,039	2,832	18,004	----	14,547	42,422	55,697
Lewistown	----	200	403	734	333	1,670	209	----	----	----	5,052	5,261	6,931
Media	----	945	3,492	3,495	1,475	9,407	1,067	1,167	----	----	----	2,234	11,641
Middletown	----	268	1,613	4,812	4,600	11,293	1,308	1,158	----	----	----	2,466	13,759
Morrisville	----	113	1,153	3,179	846	5,291	540	639	171	----	----	1,350	6,641
Norristown	----	229	5,188	13,987	7,108	26,512	6,867	1,032	9,161	----	----	17,060	43,572
Philadelphia	1,080	60,806	392,372	839,921	282,326	1,576,505	289,586	270,594	335,074	82,676	29,620	1,007,550	2,584,055
Phoenixville	4,117	213	2,605	5,589	7,881	20,405	9,095	1,783	----	213	----	11,096	31,501
Pottstown	----	207	2,862	6,507	7,289	16,865	3,007	3,445	----	----	----	6,452	23,317
Reading	----	2,142	21,986	39,530	27,899	91,557	25,331	54,511	25,698	6,103	53	111,696	203,253
Sayre	625	1,002	3,001	4,178	2,384	11,190	2,418	2,171	18,074	----	----	22,663	33,853
Steelton	----	146	352	526	629	1,653	1,090	646	114	7,571	398	9,819	11,472
Sunbury	3,212	144	1,262	1,815	2,012	8,445	2,618	197	----	----	340	3,155	11,600
Upper Darby	----	219	5,374	14,087	6,793	26,473	4,358	277	----	----	----	4,635	31,108
West Chester	----	589	5,352	6,619	2,943	15,503	3,055	436	807	----	----	4,298	19,801
Williamsport	7,690	1,452	6,678	5,369	2,225	23,414	6,682	1,106	30,673	8,243	----	46,704	70,118
York	13,820	2,526	18,680	27,737	9,114	71,877	10,640	10,549	118	----	----	21,307	93,184
All other cities	20,235	52,394	220,192	468,445	270,438	1,031,704	221,396	635,482	1,372,381	940,253	451,947	3,621,459	4,653,163
Total rail shipments 1/	65,094	187,710	837,230	1,696,696	782,577	3,569,307	742,555	1,109,489	2,124,518	1,248,069	517,337	5,741,968	9,311,275
Truck shipments (Outside "Local Sales" area) 2/	3,215	17,284	332,540	780,077	378,004	1,511,120	231,351	138,596	115,700	79,878	108,869	674,394	2,185,514
Local Sales 3/	27,250	11,942	192,095	865,457	1,290,262	2,387,006	526,471	370,740	421,085	407,529	12,944	1,738,769	4,125,775
State Total	95,559	216,936	1,361,865	3,342,230	2,450,843	7,467,433	1,500,377	1,618,825	2,661,303	1,735,476	639,150	8,155,131	15,622,564

1/ Includes 385,202 tons of coal shipped from the mine by over-the-road truck to final destinations, which was reported in such manner that it was impracticable to remove it from data on rail shipments. This tonnage is broken down by size as follows: 4,852 tons of Egg, 32,447 tons of Stove, 113,803 tons of Chestnut, 81,881 tons of Pea, 60,791 tons of Buckwheat No. 1, 54,015 tons of Rice, 37,034 tons of Barley, and 379 tons of Buckwheat No. 4 coal.

2/ To obtain actual truck shipments for Pennsylvania add the 385,202 tons indicated in footnote 1/ to this total, or see page 27 of this report.

3/ This tonnage was transported principally by truck.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	Total All Sizes
Delaware:													
Dagsboro----------------	----	48	287	12,877	74	13,286	----	----	----	----	----	----	13,286
Dover-------------------	----	1,015	2,143	12,850	1,057	17,065	582	----	124	----	----	706	17,771
Frankford---------------	----	----	438	8,216	58	8,712	----	----	----	----	----	----	8,712
Millsboro---------------	----	----	596	13,035	156	13,787	----	----	----	----	----	----	13,787
Wilmington--------------	278	7,194	42,208	63,561	12,438	125,679	6,295	8,502	15,623	8,219	430	39,069	164,748
All other cities--------	44	4,496	32,257	72,267	8,183	117,247	3,595	755	2,426	105	6,550	13,431	130,678
Total rail shipments 1/	322	12,753	77,929	182,806	21,966	295,776	10,472	9,257	18,173	8,324	6,980	53,206	348,982
Total truck shipments 2/	----	215	9,613	15,937	1,821	27,586	683	84	----	----	----	767	28,353
State Total	322	12,968	87,542	198,743	23,787	323,362	11,155	9,341	18,173	8,324	6,980	53,973	377,335
District of Columbia:	54	17,958	98,968	118,370	18,548	253,898	26,598	1,475	52	190	181	28,496	282,394
Maryland:													
Annapolis---------------	----	1,337	5,251	3,600	747	10,935	594	----	62	----	----	656	11,591
Baltimore---------------	1,444	26,313	146,315	111,663	34,745	320,480	54,302	2,492	38,505	2,037	----	97,336	417,816
Elkton------------------	----	289	3,151	3,902	610	7,952	1,340	----	----	----	----	1,340	9,292
Salisbury---------------	----	3,140	5,992	8,966	561	18,659	537	514	----	----	----	1,051	19,710
Silver Spring-----------	----	502	4,698	4,799	1,422	11,421	2,054	402	----	----	----	2,456	13,877
All other cities--------	----	17,931	101,963	153,470	18,968	292,332	51,839	4,794	17,053	3,440	447	77,573	369,905
Total rail shipments	1,444	49,512	267,370	286,400	57,053	661,779	110,666	8,202	55,620	5,477	447	180,412	842,191
Total truck shipments	----	1,458	33,221	50,088	11,750	96,517	9,291	4,256	900	----	----	14,447	110,964
State Total	1,444	50,970	300,591	336,488	68,803	758,296	119,957	12,458	56,520	5,477	447	194,859	953,155
Virginia:													
Alexandria--------------	----	737	7,866	6,396	1,071	16,070	11,398	150	----	----	----	11,548	27,618
Arlington---------------	----	----	1,373	1,853	116	3,342	48	----	----	----	----	48	3,390
Norfolk-----------------	----	55	2,078	1,366	----	3,499	47	----	----	----	----	47	3,546
Richmond----------------	----	226	1,850	3,788	----	5,864	----	----	55	53	----	108	5,972
All other cities--------	----	8,999	26,110	37,125	4,384	76,618	13,524	----	463	----	2,973	16,960	93,578
State Total	----	10,017	39,277	50,528	5,571	105,393	25,017	150	518	53	2,973	28,711	134,104

1/ Includes 22 tons of Stove, and 256 tons of Chestnut coal shipped from the mine by over-the-road truck to final destinations, which was reported in such manner that it was impracticable to remove it from data on rail shipments.

2/ To obtain actual truck shipments for Delaware add the 278 tons indicated in footnote 1/ to this total, or see page 27 of this report.

LAKE STATES

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	Total All Sizes
Illinois:													
Chicago-----------------	----	1,182	27,215	73,587	1,930	103,914	452	1,666	2,584	30,516	30,530	65,748	169,662
All other cities--------	148	1,864	14,738	39,538	1,238	57,526	4,287	24,277	9,735	3,612	4,038	45,949	103,475
State Total	148	3,046	41,953	113,125	3,168	161,440	4,739	25,943	12,319	34,128	34,568	111,697	273,137
Michigan:													
Detroit-----------------	----	16,506	85,973	60,995	1,498	164,972	556	542	----	52,115	11,119	64,332	229,304
All other cities--------	237	12,157	40,358	67,157	1,225	121,134	5,494	15,700	----	379	2,645	24,218	145,352
State Total	237	28,663	126,331	128,152	2,723	286,106	6,050	16,242	----	52,494	13,764	88,550	374,656
Minnesota:													
Minneapolis-------------	----	38	1,040	4,639	826	6,543	1,271	214	----	----	62	1,547	8,090
St. Paul----------------	----	26	4,848	2,929	680	8,483	198	132	----	----	18	348	8,831
All other cities--------	----	92	5,421	30,970	1,337	37,820	404	40	----	----	223	667	38,487
State Total	----	156	11,309	38,538	2,843	52,846	1,873	386	----	----	303	2,562	55,408
Ohio:													
Cleveland---------------	----	1,599	1,099	6,780	158	9,636	305	----	661	47	80	1,093	10,729
Toledo------------------	----	1,000	3,143	13,798	57	17,998	59	----	----	2,489	----	2,548	20,546
All other cities--------	54	1,700	2,497	49,468	50	53,769	475	1,119	990	79	310	2,973	56,742
State Total	54	4,299	6,739	70,046	265	81,403	839	1,119	1,651	2,615	390	6,614	88,017
Wisconsin:													
Milwaukee---------------	----	1,452	87,389	148,592	25,282	262,715	8,203	1,948	----	9,576	7,880	27,607	290,322
Superior----------------	----	----	489	3,554	315	4,358	70	156	----	18,993	299,560	318,779	323,137
All other cities--------	----	524	26,149	57,199	3,654	87,526	1,326	312	----	116,593	117,915	236,146	323,672
State Total	----	1,976	114,027	209,345	29,251	354,599	9,599	2,416	----	145,162	425,355	582,532	937,131
All Other States:													
Rail Shipments----------	308	3,455	15,114	140,585	2,572	162,034	6,762	934	830	641	47,369	56,536	218,570
Truck Shipments---------	----	99	4,482	6,668	1,221	12,470	592	73	14	12	----	691	13,161
Total All Other States	308	3,554	19,596	147,253	3,793	174,504	7,354	1,007	844	653	47,369	57,227	231,731
Total United States	135,347	2,135,246	9,543,475	12,503,798	4,773,985	29,091,851	6,789,393	3,831,493	5,413,909	2,675,992	1,552,651	20,263,438	49,355,289

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Ontario:													
Barrie------------------	----	1,736	5,300	4,819	599	12,454	407	50	----	----	----	457	12,911
Belleville--------------	----	1,736	10,157	12,985	863	25,741	788	48	----	----	----	836	26,577
Brampton----------------	----	1,724	4,351	6,557	463	13,095	184	111	254	----	----	549	13,644
Brantford---------------	----	4,614	22,899	18,482	1,462	47,457	2,872	450	----	----	----	3,322	50,779
Brockville--------------	----	1,981	10,277	14,594	838	27,690	1,676	211	320	----	705	2,912	30,602
Cornwall----------------	----	2,081	9,491	7,157	402	19,131	695	296	----	----	----	991	20,122
Galt--------------------	----	4,320	10,554	7,311	541	22,726	330	423	----	----	----	753	23,479
Guelph------------------	----	3,202	10,819	7,818	813	22,652	612	323	----	----	----	935	23,587
Hamilton----------------	----	28,304	85,813	61,388	7,987	183,492	11,207	8,433	----	----	----	19,640	203,132
Kingston----------------	----	5,962	20,724	23,452	1,547	51,685	4,707	548	----	----	178	5,433	57,118
Kitchener---------------	51	4,025	8,415	6,441	762	19,694	516	174	49	----	----	739	20,433
London------------------	----	22,895	33,523	21,619	3,542	81,579	1,887	2,512	99	----	----	4,498	86,077
Niagara Falls-----------	----	8,616	16,165	11,604	2,942	39,327	2,347	----	621	----	----	2,968	42,295
Oshawa------------------	----	5,995	16,128	17,900	1,171	41,194	892	59	----	----	----	951	42,145
Ottawa------------------	----	27,399	63,603	38,937	3,324	133,263	23,060	19,003	275	161	----	42,499	175,762
Peterboro---------------	----	3,883	12,716	14,065	946	31,610	553	----	----	----	----	553	32,163
St. Catharines----------	----	5,829	21,487	12,639	1,310	41,265	961	1,088	----	----	----	2,049	43,314
St. Thomas--------------	----	5,485	9,001	5,734	455	20,675	52	46	----	----	----	98	20,773
Stratford---------------	----	2,277	10,328	7,716	642	20,963	704	2,865	106	----	----	3,675	24,638
Sudbury-----------------	----	4,273	5,345	3,058	383	13,059	548	323	----	52	----	923	13,982
Toronto-----------------	----	212,564	474,170	364,078	63,394	1,114,206	61,627	19,957	688	----	----	82,272	1,196,478
Waterloo----------------	----	3,363	10,612	6,191	730	20,896	718	----	----	----	----	718	21,614
Welland-----------------	11,007	3,457	9,047	6,481	688	30,680	1,209	13,580	----	----	----	14,789	45,469
Windsor-----------------	----	18,168	21,323	8,583	756	48,830	134	----	----	----	----	134	48,964
Woodstock---------------	----	2,467	5,275	3,974	636	12,352	203	733	46	----	----	982	13,334

CANADA CONT'D.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	Total All Sizes
Ontario: continued All other cities-------	46	113,726	342,047	379,814	26,968	862,601	33,071	18,211	946	173	6,483	58,884	921,485
Province Total	11,104	500,082	1,249,570	1,073,397	124,164	2,958,317	151,960	89,444	3,404	386	7,366	252,560	3,210,877
Quebec:													
Chicoutimi--------------	----	2,184	4,396	908	----	7,488	5,102	647	----	----	----	5,749	13,237
Hull--------------------	----	688	3,243	1,812	244	5,987	2,324	882	----	----	----	3,206	9,193
Lachine-----------------	----	1,166	5,464	4,699	563	11,892	1,298	247	243	----	----	1,788	13,680
Levis-------------------	----	2,733	4,430	2,402	----	9,565	3,064	393	----	----	----	3,457	13,022
Montreal----------------	299	62,011	234,382	158,394	17,332	472,418	192,544	97,720	23,412	5,335	1,210	320,221	792,639
Quebec------------------	----	9,590	30,758	17,650	170	58,168	68,815	23,124	----	----	132	92,071	150,239
St. Hyacinthe-----------	----	703	2,866	1,360	174	5,103	1,678	2,064	----	----	----	3,742	8,845
St. Jean (St. Johns)----	----	702	3,057	2,256	255	6,270	873	1,114	716	----	----	2,703	8,973
Sherbrooke--------------	----	1,928	7,066	4,423	1,900	15,317	4,386	4,829	----	----	----	9,215	24,532
Trois Rivieres----------	----	1,449	2,427	1,167	149	5,192	1,664	3,049	----	----	----	4,713	9,905
Valley Field------------	----	597	4,379	2,609	247	7,832	350	529	270	----	----	1,149	8,981
All other cities--------	----	15,135	66,420	28,791	1,880	112,226	27,263	33,124	26,365	4,104	8,202	99,058	211,284
Province Total	299	98,886	368,888	226,471	22,914	717,458	309,361	167,722	51,006	9,439	9,544	547,072	1,264,530
Other Provinces-----------	----	14,040	27,361	43,766	4,610	89,777	11,122	6,127	84	----	50	17,383	107,160
Total Canada	11,403	613,008	1,645,819	1,343,634	151,688	3,765,552	472,443	263,293	54,494	9,825	16,960	817,015	4,582,567
Other Countries 1/ ---------	----	----	----	----	----	----	----	----	----	----	----	----	2,329,019
Grand Total	146,750	2,748,254	11,189,294	13,847,432	4,925,673	32,857,403	7,261,836	4,094,786	5,468,403	2,685,817	1,569,611	21,080,453	56,266,875

1/ Compiled from data of the United States Department of Commerce. For countries of destination see table 2 on page 28 of this report.

DISTRIBUTION OF PENNSYLVANIA ANTHRACITE FOR THE COAL YEAR, APRIL 1, 1946 TO MARCH 31, 1947.

Destinations	Domestic sizes						Steam sizes						Total All Sizes
	Broken	Egg	Stove	Chestnut	Pea	Total Domestic	Buckwheat No. 1	Rice	Barley	Buckwheat No. 4	All Other Sizes	Total Steam	
Delaware------------------	----	215	9,635	16,193	1,821	27,864	683	84	-----	----	----	767	28,631
Maryland------------------	----	1,458	33,221	50,088	11,750	96,517	9,291	4,256	900	----	----	14,447	110,964
New Jersey----------------	----	15,274	133,414	280,561	64,647	493,896	35,406	23,277	7,269	----	----	65,952	559,848
New York------------------	----	4,492	150,919	242,236	74,715	472,362	43,714	15,273	160	----	----	59,147	531,509
Pennsylvania: (Outside "Local Sales" area)----	3,215	22,136	364,987	893,880	459,885	1,744,103	292,142	192,611	152,734	80,257	108,869	826,613	2,570,716
Local Sales------------	27,250	11,942	192,095	865,457	1,290,262	2,387,006	526,471	370,740	421,085	407,529	12,944	1,738,769	4,125,775
Total Pennsylvania	30,465	34,078	557,082	1,759,337	1,750,147	4,131,109	818,613	563,351	573,819	487,786	121,813	2,565,382	6,696,491
Other States 1/------------	----	361	5,058	7,543	1,455	14,417	973	132	14	12	----	1,131	15,548
Total Truck 2/	30,465	55,878	889,329	2,355,958	1,904,535	5,236,165	908,680	606,373	582,162	487,798	121,813	2,706,826	7,942,991

1/ See footnote 1/ Connecticut, for 2,387 tons of additional truck coal which is included in this total.

2/ See footnotes for the following states: Delaware, New Jersey, New York, and Pennsylvania for 419,552 net tons of coal which was reported in such manner that it was impracticable to remove it from the detailed data on rail shipments. However, this tonnage is included in the above figure of 7,942,991 shown for total truck movement.

Table 2.— United States exports of Pennsylvania anthracite to countries other than Canada, by continental groups, by months, for the coal year, April 1, 1946 to March 31, 1947 1/ 2/
(in net tons)

Country of destination	1946									1947			Total
	April	May	June	July	August	September	October	November	December	January	February	March	
NORTH AND CENTRAL AMERICA:													
Bahamas	2	11	3	----	----	----	---- 1	----	----	----	6	5	28
Bermuda	----	----	238	40	----	----	----	----	----	140		403	821
Cuba	5,608	3,932	5,217	14,404	----	4,846	7,697	7,601	----	10,528	----	3,003	62,836
Dominican Republic	----	----	12	----	----	----	----	----	----	----	----	----	12
Guatemala	----	----	----	----	----	----	----	----	----	30	----	----	30
Haiti	----	2	----	----	----	----	----	----	----	----	----	----	2
Jamaica	----	----	----	----	----	----	----	----	----	----	----	126	126
Mexico	1	----	1	37	3	54	5	6	4,274	----	----	----	4,381
Newfoundland and Labrador	----	----	----	----	----	----	----	----	2,298	----	----	----	2,298
Trinidad and Tobago	11	----	----	----	105	----	----	----	-----	----	----	----	116
Total	5,622	3,945	5,471	14,481	108	4,900	7,703	7,607	6,572	10,698	6	3,537	70,650
SOUTH AMERICA:													
Argentina	----	8	----	----	----	----	----	----	----	----	----	----	8
Bolivia	----	----	----	----	----	----	----	----	----	----	53	----	53
Brazil	----	----	----	----	----	----	----	----	67	----	----	----	67
Chile	----	----	----	----	----	73	----	----	----	----	----	----	73
Surinam (Neth. Guiana)	----	----	----	----	----	2	----	----	----	----	----	----	2
Uruguay	----	----	----	----	----	----	----	----	250	----	----	----	250
Total	----	8	----	----	----	75	----	----	317	----	53	----	453
EUROPE:													
Belgium and Luxembourg	58,878	29,287	28,618	67,878	164,404	139,623	10,037	57,894	182,046	32,338	61,908	47,001	879,912
Eire	----	----	----	----	----	----	----	5	6	----	----	2	13
France	7,066	177,214	57,029	91,630	9,947	50	----	67,966	309,210	77,027	12	19,522	816,673
Italy	----	24,713	----	19,615	29,896	11,037	10,515	50,200	85,570	69,232	9,322	20,722	330,822
Netherlands	9,826	----	9,671	39,083	----	----	----	----	29,411	----	9,766	10,296	108,053
Norway	----	----	9,099	----	----	----	----	----	----	----	----	----	9,099
Portugal	----	----	----	----	----	----	----	280	----	----	----	----	280
Sweden	----	----	----	----	----	----	----	----	----	8,851	16,818	32,691	58,360
Switzerland	----	19,621	----	5,063	----	----	----	----	----	----	----	----	24,684
Yugoslavia	----	----	----	----	----	10,862	----	----	8,963	----	----	----	19,825
Total	75,770	250,835	104,417	223,269	204,247	161,572	20,552	176,345	615,206	187,448	97,826	130,234	2,247,721
ASIA:													
China	----	----	----	----	----	3,369	----	----	103	----	----	----	3,472
Palestine and Trans-Jordan	----	----	----	----	----	----	----	----	----	----	6,721	----	6,721
Total	----	----	----	----	----	3,369	----	----	103	----	6,721	----	10,193
AFRICA:													
Liberia	----	----	----	2	----	----	----	----	----	----	----	----	2
GRAND TOTAL 3/	81,392	254,788	109,888	237,752	204,355	169,916	28,255	183,952	622,198	198,146	104,606	133,771	2,329,019

1/ Compiled from records of the U. S. Department of Commerce.

2/ For details on distribution of anthracite in Canada see pages 25 and 26.

3/ It is estimated that of total exports to countries other than Canada 10 percent consisted of Domestic Sizes (Pea and larger), 3.5 percent, Buckwheat No. 1; 5.6 percent, Rice; 22.6 percent, Barley; and 58.3 percent, Buckwheat 4 and 5.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary JAMES BOYD, Director

12 1947

For release November 6, 1947

MINERAL MARKET REPORTS
MMS No. 1553

COPPER IN 1946

Despite the record peacetime consumption of copper in 1946, the producing segment of the industry operated at far below capacity rates, according to the Bureau of Mines, United States Department of the Interior. During much of the year the industry was plagued by labor and reconversion problems affecting the entire national economy rather than by problems peculiar to the copper industry. Labor strikes at mines, smelters and refineries were the chief depressant to domestic production in 1946 and came on top of a chronic labor shortage that had affected production adversely during most of the war. Mine production and smelter and refinery production from domestic ores dropped 21, 23, and 25 percent, respectively. The domestic figures were not greatly in excess of half of the high record totals for 1943. Uncertainty regarding the extension of the Office of Price Administration, the month-long interim during which OPA was inoperative, and finally the anticipation of the withdrawal of ceiling price restrictions on copper, interferred with or prevented the making of adequate plans for the future and thus were additional adverse factors. The passage of the Strategic and Critical Materials Stockpiling Act in July, on the other hand, was generally considered to be a favorable influence on domestic metal markets.

Curtailed purchases of foreign copper by the Reconstruction Finance Corporation and discontinuance of such purchases in November reduced the quantity of foreign copper available for consumption in the United States, despite the urgent need for metal from abroad to fill the excess of demand over supply from domestic mines. Private industry could not bring foreign copper into the country under ceiling price limitations because of the 4-cent excise tax, which was considered inapplicable to imports brought into the country by Government purchase. Moreover, when the foreign price advanced, the Government could absorb the excess of foreign prices over the ceiling price, and did so for a period. The gap between new supply and the continuing large demand was bridged by a sharp reduction in Government inventories.

The ceiling price for copper was raised, effective June 3 and contingent upon the completion of certain wage agreements, from 12 to 14 3/8 cents a pound for electrolytic copper, delivered Connecticut Valley, the first rise since before the copper price control was established on August 12, 1941. Coincident with the price rise bonuses were cut 2 3/8 cents a pound, reducing the burden on the Government. Price controls were temporarily out of operation from July 1 until July 26 when a Bill extending the Office of Price Administration became effective; provisions were made for retroactive premium payments to cover the period when no plan was in effect. Ceiling price controls on most commodities were discarded, effective November 10, and the copper price rose to 19 1/2 cents a pound by the year-end. Late in 1946 the price for copper passed that for aluminum for the first time in history,

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Prepared by Helena M. Meyer, under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

increasing the possibilities for large-scale substitution of aluminum for copper should the new price relationship continue.

Foreign trade in copper, although still far from its prewar status, trended somewhat away from the abnormal war pattern in 1946; there was evidence, however, that the United States would not resume its prewar position as a large exporter of copper. Prior to 1941 the unrefined class dominated the unmanufactured copper import group, except in 1932, for many years. During the war refined copper lead by a very substantial margin, but in 1946 the unrefined class resumed supremacy, though by a much smaller margin than previously. Refined copper imports in 1946 continued far in excess of the levels attained prior to World War II, but amounted to only 29 percent of the high record rate attained in 1945. Total imports of unmanufactured copper dropped to less than one-half of the record 1945 tonnage.

Refined copper again became the principal export class in 1946, following its displacement by insulated wire and cable in 1944 and 1945. Total refined exports for 1946 gained 8 percent over 1945, but were considerably under prewar levels.

Salient statistics of the copper industry in the United States, 1944-46, in short tons

	1944	1945	1946
New copper produced—			
From domestic ores, as reported by—			
Mines	972,549	772,894	608,737
Ore produced:			
Copper ore 1/	91,063,648	2/77,472,983	62,232,342
Average yield of copper, percent	.99	.93	.91
Smelters	1,003,379	782,726	599,656
Refineries	973,852	775,738	578,429
From foreign ores, matte, etc., refinery reports	247,335	332,861	300,233
Total new refined, domestic and foreign	1,221,187	1,108,599	878,662
Secondary copper recovered from old scrap only	456,710	2/ 497,095	406,453
Imports (unmanufactured) 3/	785,211	853,196	393,275
Refined 3/	492,395	531,367	154,371
Exports of metallic copper 4/	237,515	132,545	97,475
Refined (ingots, bars, rods, etc.)	69,002	53,572	5/ 52,629
Stocks at end of year	392,000	461,000	350,000
Refined copper	81,000	130,000	96,000
Blister and materials in solution	311,000	331,000	254,000
Withdrawals from total supply on domestic account:			
Total new copper	2/1,504,000	2/1,415,000	1,391,000
Price, average. 6/ cents per pound	11.8	11.8	14.4
World smelter production, new copper	2,843,000	7/2,425,000	7/2,023,000

1/ Includes old tailings.

2/ Revised

3/ Data include copper imported for immediate consumption plus material entering country under bond.

4/ Total exports of copper, exclusive of ore, concentrates, composition metal, and unrefined copper. Exclusive also of "Other manufacturers of copper," for which figures of quantity are not recorded.

5/ Excludes rods.

6/ Exclusive of bonus payments of the Office of Metals Reserve.

7/ Estimated.

Mine Production

Arizona was the only important copper-producing State to increase production in 1946, its percentage of the United States total rising sharply. Production in Utah, the second ranking State, dropped to little more than one-half the 1945 output chiefly because of the five-month strike at the Bingham Canyon mine of the Kennecott Copper Corporation. Smelter and refinery strikes over a wide area, as well as other mine strikes, reduced production also in areas other than the aforementioned.

Mine production of recoverable copper in the United States, 1942-46, by States, in short tons

State	1942	1943	1944	1945	1946
Alaska.........	22	27	2	5	2
Arizona........	393,387	403,181	358,303	287,203	289,223
California.....	1,058	8,762	12,721	6,473	4,240
Colorado.......	1,102	1,028	1,048	1,485	1,754
Idaho..........	3,430	2,324	1,688	1,548	1,038
Michigan.......	45,679	46,764	42,421	30,401	21,663
Missouri.......	1,300	1,340	3,302	3,399	1,857
Montana........	141,194	134,525	118,190	88,506	58,481
Nevada.........	83,663	71,068	61,232	52,595	48,616
New Mexico.....	80,100	76,163	69,730	56,571	50,191
North Carolina.	(1)	(1)	(1)	———	———
Oregon.........	103	6	3	1	7
Pennsylvania...	(1)	(1)	(1)	(2)	(2)
South Carolina.	(3)	(3)	———	———	———
South Dakota...	1	———	1	———	———
Tennessee......	1/ 14,174	1/ 13,855	1/ 12,860	2/ 12,385	2/ 12,850
Texas..........	99	81	115	55	3
Utah...........	306,691	323,989	282,575	226,376	114,284
Vermont........	———	290	1,898	(2)	(2)
Virginia.......	28	100	291	70	———
Washington.....	8,030	7,315	6,169	5,821	4,527
Wyoming........	———	———	———	———	1
	1,080,061	1,090,818	972,549	772,894	608,737

1/ North Carolina and Pennsylvania included under Tennessee. Bureau of Mines not at liberty to publish separate figures.

2/ Pennsylvania and Vermont included under Tennessee. Bureau of Mines not at liberty to publish separate figures.

3/ Less than 1 ton.

Refinery Production

Total refinery output from domestic and foreign primary crude materials dropped 21 percent in 1946.

Primary and secondary copper produced by regular refining plants in the United States and imported, 1944-46, in short tons

	1944	1945	1946
Primary:			
Domestic: 1/			
Electrolytic 2/..................	837,089	669,705	475,571
Lake 2/..........................	41,597	29,995	21,567
Casting..........................	95,166	76,038	81,291
	973,852	775,738	578,429
Foreign: 1/			
Electrolytic.....................	247,335	298,128	300,233
Casting and best select..........	———	34,733	———
Refinery production of new copper.	1,221,187	1,108,599	878,662
Imports of refined copper.........	492,395	531,367	154,371
Total new refined copper made available..............	1,713,582	1,639,966	1,033,033
Secondary:			
Electrolytic 3/..................	78,402	4/ 84,044	4/ 97,615
Casting..........................	7,996	12,618	7,957
	86,398	96,662	105,572
Grand total.....................	1,799,980	1,736,628	1,138,605

1/ The separation of refined copper into metal of domestic and foreign origin is only approximate, as an accurate separation of the amounts at this stage of manufacture is not possible.

2/ Some copper from Michigan is electrolytically refined at an Eastern refinery and is included as electrolytic copper.

3/ Includes some secondary Lake copper.

4/ Copper from scrap at Lake refineries included under "casting" copper in 1945-46. Includes a little copper reported from foreign scrap in 1945-46.

In addition to their output of metallic copper the regular refining companies produced bluestone (hydrous copper sulfate) having a copper content of 5,070 short tons as compared with 8,237 tons in 1945. Other companies reported 26,386 and 23,154 tons, respectively, in the two years.

Stocks

Stocks of copper at primary smelting and refining plants in the United States, and those of the Office of Metals Reserve at the end of the year, 1942-46, in short tons

Year	Smelters and refineries		Metals Reserve 2/
	Refined copper	Blister and material in process of refining 1/	
1942	84,000	235,500	91,472
1943	68,500	241,000	224,081
1944	81,000	311,000	347,304
1945	130,000	331,000	499,871
1946	96,000	254,000	72,745

1/ Includes copper in transit from smelters in the United States to refineries therein.
2/ Reported as "refined" but includes some unrefined; also covers a small quantity of metal held in Canada (none so held at end of 1946). Data are on an ownership basis and hence duplicate some of the tonnage (believed to be minor) shown under smelters and refineries.

Consumption

Copper consumption in 1946 dropped only 2 percent from 1945 despite reduced supplies from domestic and foreign sources. A substantial part of requirements was met by reduction in Metals Reserve inventories.

New refined copper withdrawn from total year's supply on domestic account, 1944-46, in short tons

	1944	1945	1946
Total supply of new copper	1,713,582	1,639,966	1,033,033
Stocks at beginning of year	68,500	81,000	130,000
Total available supply	1,782,082	1,720,966	1,163,033
Copper exported 1/	68,373	48,563	52,629
Stock at end of the year	81,000	130,000	96,000
	149,373	178,563	148,629
Withdrawn on domestic account 2/	1,504,000	1,415,000	1,391,000

1/ Includes refined copper in ingots, bars, or other forms.
2/ Adjusted for Office of Metals Reserve stock changes. Data for 1944-45 are revised.

Imports and Exports

Figures on imports and exports compiled from records of the Department of Commerce are shown in the following tables.

Copper (unmanufactured) imported into the United States, 1946, in short tons 1/

Country	Ore (copper content)	Concentrates (copper content)	Regulus, black or coarse copper and cement (copper content)	Unrefined black blister and converter copper in pigs or converter bars	Refined in ingots, plates, or bars	Old and scrap copper fit only for remanufacture and scale and clippings
Africa (British):						
Northern Rhodesia 2/	2	258	------	11,682	------	------
Union of South	------	137	64	4,297	866	32
Australia	------	8	------	------	------	71
Belgian Congo	(3)	------	------	4,469	------	------
Bolivia	------	4,573	------	------	------	------
Canada	1	8,353	160	------	17,193	520
Chile	1,279	2,191	1	66,867	136,312	37
Cuba	------	12,378	------	------	------	------
Ecuador	------	44	------	2,931	------	3
Mexico	3,242	5,038	338	54,858	------	------
Newfoundland and Labrador	------	3,231	2	------	------	22
Peru	99	3,731	164	26,380	------	------
Turkey	------	------	------	17,414	------	------
United Kingdom	------	------	------	3,323	------	63
Other countries	161	119	3	------	------	358
	4,784	40,061	732	192,221	154,371	1,106

1/ Data include copper imported for immediate consumption plus material entering the country under bond.
2/ Tonnages credited to Southern Rhodesia by the U. S. Department of Commerce have been added to Northern Rhodesia.
3/ Less than 1 ton.

Copper exported from the United States, 1946, in short tons

Country	Ore, concentrates, unrefined, etc. (copper content)	Refined in bars, ingots or other forms	Rods	Old and scrap	Pipes and tubes	Plates and sheets	Wire (except insulated)	Insulated wire and cable
Algeria	—	565	3	—	13	30	5	438
Argentina	(1)	1,427	4	—	115	6	385	424
Belgium and Luxembourg	—	728	—	—	10	2	1	7
Brazil	(1)	4,453	96	14	465	879	277	457
Canada	12	62	84	23	599	619	70	1,243
Canal Zone	—	14	(1)	—	5	7	1	235
Chile	—	165	1	—	24	2	25	736
China	5	2,010	6	—	49	56	492	570
Colombia	—	9	1	—	83	137	397	969
Cuba	1	4	11	2	445	68	268	1,122
France	—	10,457	(1)	765	—	(1)	100	688
French Indo-China	—	3	—	—	—	—	72	242
India and Dependencies	—	5,651	—	—	14	6	8	223
Mexico	3	833	35	2	496	245	127	1,186
Netherlands	—	1,288	1,061	—	13	7	3	14
Norway	—	415	270	—	11	—	—	121
Peru	—	1	7	—	31	33	72	340
Philippines, Republic of	(1)	4	2	—	9	7	248	1,106
Portugal	—	255	2	—	26	138	96	99
Sweden	—	8,674	—	—	114	23	6	317
Switzerland	—	6,180	727	103	52	(1)	27	2
Turkey	—	57	84	—	24	711	279	788
Union of South Africa	—	(1)	—	—	56	35	4	277
U. S. S. R.	—	43	24	—	—	24	177	13,351
United Kingdom	—	6,553	—	—	—	(1)	—	44
Uruguay	—	77	—	—	38	29	390	1,996
Venezuela	1	1	5	—	51	136	223	1,024
Other countries	1	2,700	29	—	188	487	746	2,349
	23	52,629	2,452	909	2,931	3,687	4,499	30,368

1/ Less than one ton.

World smelter production of copper, 1943-46, in metric tons
(Compiled by B. B. Mitchell)

Country	1943	1944	1945	1946
North America:				
Canada	1/232,740	1/224,049	200,095	151,499
Mexico	43,013	32,974	53,287	52,371
United States 2/	1,103,918	1,022,382	784,173	592,229
	1,379,671	1,279,405	1,037,555	796,099
South America:				
Chile	489,320	489,906	440,289	358,603
Ecuador 3/	4,030	3,708	3,285	2,659
Peru	28,215	26,888	25,639	19,703
	521,565	520,502	469,213	380,965
Europe:				
Austria	5,711	6,051	1,454	-------
Belgium 4/	18,320	4,310	-------	(5)
Finland	15,535	6,756	13,686	18,960
France 6/	404	122	6,213	9,696
Germany 7/	31,300	24,000	(5)	19,050
Italy	1,432	------	-------	(5)
Norway	2,014	937	1,692	7,501
Rumania	70	(5)	(5)	(5)
Spain	10,952	10,891	6,268	8,147
Sweden	15,938	15,062	18,249	16,385
U.S.S.R. 7/ 8/	130,000	130,000	160,000	(5)
Yugoslavia	27,000	22,700	(5)	(5)
	258,676	220,900	7/248,000	(5)
Asia:				
China 9/	1,146	1,030	623	947
India	6,198	5,822	6,096	6,412
Japan 10/	119,858	102,352	26,871	(5)
Korea (Chosen)	4,554	5,193	11/426	11/161
Turkey	9,715	11,404	9,800	10,050
U.S.S.R.	(8)	(8)	(8)	(8)
	141,471	125,801	7/44,500	7/18,000
Africa:				
Belgian Congo	156,850	165,484	160,200	143,885
Northern Rhodesia	255,027	224,397	197,192	185,472
Union of South Africa	22,150	22,397	23,665	26,723
	434,027	412,278	381,057	356,080
Oceania: Australia	20,785	20,217	20,827	19,140
World total	2,756,195	2,579,103	7/2,200,000	7/1,835,000

1/Copper content of blister produced. 2/ Smelter output from domestic and foreign ores, exclusive of scrap. Production from domestic ores only, exclusive of scrap, was as follows: 1943, 991,492; 1944, 910,245; 1945, 710,073; 1946, 543,996. The diversion during the war of Belgian Congo matte from its previous destination, Belgium, for resmelting in the United States resulted in some duplication. The movement ended in 1945. 3/ United States imports. 4/ Figures represent blister copper only. Belgium reports a large output of refined copper which is not included above as it is believed produced principally from crude copper from Belgian Congo and would therefore duplicate output reported under the latter country. 5/ Data not available, estimate by the author included in the total. 6/ Exclusive of material from scrap. 7/ Approximate production. 8/ Output from U.S.S.R. in Asia included under U.S.S.R. in Europe. 9/ Data represents areas designated as Free China during the period of Japanese occupation. 10/ Preliminary data for fiscal year ended March 31 of year following that stated. 11/ South Korea only.

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FOR RELEASE NOVEMBER 21, 1947

MINERAL MARKET REPORT
M.M.S. NO. 1554

COAL-CHEMICAL MATERIALS FROM COKE-OVEN OPERATIONS, 1919 TO 1946

INTRODUCTION

The entrance of the United States into World War II gave new importance to the collection and publication by the Bureau of Mines, U. S. Department of the Interior, of statistics on products obtained by the carbonization of coal. The large requirements for coal chemicals since the war have kept production at an extremely high level and this report has been prepared to show the trend in yields, production, sales, and values of all products, except coke and coke breeze, for the period 1919-1946. The following discussions and compilations cover products obtained at oven-coke plants proper and do not include finished products obtained from raw material originating at coke plants but produced by chemical manufacturers. No attempt is made to review the scientific and technical developments made in coal carbonization during this period. The coke producing States comprising the different geographic regions used in this report are as follows: New England - Connecticut, Massachusetts, and Rhode Island; Middle Atlantic - Maryland, New Jersey, New York, and Pennsylvania; Ohio - Ohio; Illinois - Indiana - Illinois, Indiana, and Missouri; Lake Dock - Michigan, Minnesota, and Wisconsin; Southeastern - Alabama, Kentucky, Tennessee, and West Virginia; and Western - California, Colorado, Texas, and Utah.

The Bureau gratefully acknowledges the cooperation of coke producers who have courteously supplied monthly and annual data making this report possible.

GENERAL SUMMARY

High-temperature carbonization of bituminous coal in vertical slot-type coke ovens is one of the principal processes for obtaining chemical raw materials. Gas, tar, ammonia, and light oil are the principal coal-chemical materials; but this term also includes fractions and individual compounds obtained from the principal products. As the recovery of the chemical raw materials accompanies the production of coke, the relative output of coke and the coal-chemical materials are approximately parallel. The recovery of the chemical raw materials represents, to coke-plant operators, a source of revenue and a means of reducing the cost of converting coal to coke. Although production, and consequently gross financial returns from the sales of coal-chemical materials at coke plants, has increased substantially since 1919, the proportion of revenue obtained through the sale of them has not kept pace with the rise in the cost of coal and value of coke. As shown in table 1, the total value of all coal-chemical materials sold in 1919 was equivalent to 28.1 percent of the value of all products; in 1929, it had increased to 36.7 percent, but since that time there has been a definite downward trend and in 1946 amounted to but 25.3 percent. The average value of coke, breeze, and coal-chemical materials per ton of coke, together with the cost of coal is given in table 2 and shows the shift in income from the different products. In 1919, ammonia in the form of sulfate and liquor supplied the greatest income mainly because of the high unit value prevailing at that time (table 3). Coke-oven gas assumed the leadership over ammonia as the principal source of revenue (outside of coke) in 1921, a position it has maintained since. In evaluating the significance of this change it must be remembered that the average returns represent a composite of all oven-coke plants most of which are associated with the iron and steel industry. Before 1920, most of the coke-oven gas was used as a metallurgical fuel and credited to the ovens at a very low cost. About 1921 the trend toward the use of coke ovens for supplying base-load city gas began to be evident by the larger average price returns for this product. Light oil and its derivatives forged ahead of ammonia in 1929 as a source of revenue and continued to improve their position until 1946 when the depressed market for toluol arrested the trend. The returns from tar have increased markedly since 1919 not only because of the higher unit value but also because of the decline in the use of crude tar as fuel in open-hearth and other metallurgical furnaces.

The average yields of gas, tar, ammonia, and light oil per ton of coal carbonized, are given in table 4 which shows that tar, ammonia, and crude light oil increased in the period between the two world wars. This was due principally to the more careful selection of coals, adoption of higher carbonizing temperatures, and improvement of apparatus. Beginning with World War II, there has been a reversal in the upward trend in yields. This may be attributed to the deterioration of old ovens, poorer quality of coals charged, and to the higher carbonizing temperatures and shorter coking periods that have been employed by coke-plant operators generally, in order to obtain maximum production of coke.

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TABLE 1. - RELATIONSHIP OF VALUE OF COAL-CHEMICAL MATERIALS SOLD TO VALUE OF ALL PRODUCTS PRODUCED OR SOLD BY COKE-PLANT OPERATORS, 1919, 1924, 1929, 1934, AND 1939-46

Year	Value of coal chemicals sold	Value of all products	Percent of coal chemicals to all products	Year	Value of coal chemicals sold	Value of all products	Percent of coal chemicals to all products
1919	$63,727,790	$226,423,429	28.1%	1941	$158,309,184	$490,868,434	32.4%
1924	103,802,507	315,519,363	32.9	1942	176,932,465	571,142,055	31.0
1929	163,675,571	446,275,847	36.7	1943	181,929,705	623,209,061	29.2
1934	92,865,828	257,948,003	36.0	1944	185,995,242	686,910,035	27.1
1939	124,814,434	343,258,986	36.4	1945	172,138,205	660,769,562	26.1
1940	145,081,877	421,724,496	34.4	1946	157,389,875	623,005,548	25.3

TABLE 2. - VALUE OF COAL, COAL-CHEMICAL MATERIALS, COKE, AND BREEZE PER NET TON OF COKE PRODUCED, 1919, 1924, 1929, 1934, AND 1939-46

Year	Coal	Coal-chemical materials sold						Tar used not sold 1/	Value of coal-chemical materials	Breeze produced	Coke produced	Value of coke, breeze, and coal-chemical materials
		Ammonia and its compounds	Light oil and its derivatives including naphthalene	Surplus gas sold or used	Tar	Miscel-laneous products	Total					
1919 ...	$5.65	$1.064	$0.508	$0.662	$0.275	$0.026	$2.535	.....	$2.535	$0.097	$6.375	$9.007
1924 ...	5.95	.800	.505	1.465	.283	.002	3.055	$0.290	3.345	.182	5.759	9.286
1929 ...	5.04	.537	.585	1.578	.318	.046	3.064	.291	3.355	.199	4.801	8.355
1934 ...	5.33	.284	.434	1.924	.349	.025	3.016	.125	3.141	.185	5.052	8.378
1939 ...	5.36	.341	.414	1.676	.387	.092	2.910	.110	3.020	.170	4.815	8.005
1940 ...	5.23	.364	.421	1.507	.297	.097	2.686	.145	2.831	.157	4.820	7.808
1941 ...	5.53	.371	.431	1.454	.314	.145	2.715	.104	2.819	.163	5.411	8.393
1942 ...	6.18	.348	.501	1.426	.388	.177	2.840	.085	2.925	.175	6.068	9.168
1943 ...	6.70	.355	.546	1.390	.385	.178	2.854	.078	2.932	.191	6.654	9.777
1944 ...	7.16	.324	.552	1.403	.327	.167	2.773	.131	2.904	.198	7.140	10.242
1945 ...	7.45	.356	.503	1.413	.352	.148	2.772	.095	2.867	.202	7.572	10.641
1946 ...	8.17	.361	.467	1.542	.395	.154	2.919	.071	2.990	.217	8.345	11.552

1/ Does not include value of tar distilled.

TABLE 3. - AVERAGE RECEIPTS PER UNIT OF COAL-CHEMICAL MATERIALS SOLD IN THE UNITED STATES, 1919, 1924, 1929, 1934, AND 1939-46, IN CENTS

Year	Tar	Ammonia		Surplus gas	Benzol		Toluol crude and refined	Solvent naphtha	Xylol crude and refined	Crude naphthalene
		Sulfate	Liquor		Motor	All other grades				
	Gallon	Pound	Pound	M cubic feet	Gallon	Gallon	Gallon	Gallon	Gallon	Pound
1919 ...	3.2	3.8	11.0	8.6	17.6	20.6	26.3	15.2	(1)	2.0
1924 ...	4.6	2.4	9.8	16.5	15.2	21.1	23.8	18.7	(1)	1.5
1929 ...	5.1	1.8	5.1	16.6	15.9	21.1	38.6	24.2	(2)	1.6
1934 ...	3.9	1.0	2.9	19.1	9.4	15.7	27.5	17.4	23.0	1.3
1939 ...	4.8	1.1	3.1	16.6	9.2	13.2	19.4	17.0	23.2	1.6
1940 ...	4.6	1.2	3.2	15.5	8.4	12.7	24.2	15.9	23.2	1.7
1941 ...	4.7	1.3	3.3	15.3	7.6	11.6	24.2	15.1	23.7	1.8
1942 ...	5.4	1.3	3.5	15.2	8.6	13.0	26.5	14.3	25.0	2.0
1943 ...	5.4	1.3	3.7	15.0	9.0	13.0	26.9	14.8	24.9	2.1
1944 ...	5.4	1.3	3.2	15.2	8.9	13.1	27.1	14.7	25.7	2.0
1945 ...	5.3	1.3	3.0	15.8	8.6	13.0	26.3	14.4	25.8	2.1
1946 ...	5.6	1.4	3.0	17.3	8.8	12.9	20.5	12.9	22.7	2.2

1/ Not available. 2/ Included with solvent naphtha.

TABLE 4. - AVERAGE YIELD OF COKE AND COAL-CHEMICAL MATERIALS PER NET TON OF COAL CHARGED INTO OVENS IN THE UNITED STATES, 1919, 1924, 1929, 1934, AND 1939-46

Product	1919	1924	1929	1934	1939	1940	1941	1942	1943	1944	1945	1946
Coke .... pounds	1,402	1,386	1,392	1,389	1,401	1,411	1,416	1,416	1,416	1,420	1,419	1,413
Tar .... gallons	8.06	8.60	8.87	9.22	9.06	8.79	8.52	8.41	8.11	8.13	7.95	7.82
Ammonium sulfate or equivalent pounds	20.82	22.20	22.31	22.29	22.33	22.00	21.34	20.85	20.32	20.29	20.22	19.79
Crude light oil gallons	2.72	2.89	2.93	2.90	2.99	2.93	2.90	2.88	2.83	2.87	2.84	2.77
Gas ... M cubic feet	11.59	11.03	10.98	11.13	11.03	10.89	10.81	10.74	10.68	10.68	10.33	10.26
Surplus sold or used	5.38	6.14	6.61	6.98	7.09	6.84	6.71	6.66	6.59	6.58	6.33	6.29
Burned in coking process	5.92	4.67	4.13	3.97	3.80	3.89	3.97	3.91	3.90	3.95	3.85	3.85
Wasted	.29	.22	.24	.18	.14	.16	.13	.17	.19	.15	.15	.12

COKE-OVEN GAS

Coke-oven gas, with the exception of coke, is the most valuable product of coal carbonization if judged either as a source of income or in calorific value. Coke ovens are by far the largest producers of manufactured gas in the United States and are an important factor in the distribution of gaseous fuel to affiliated and neighboring industries, public utilities, and communities. Statistics on the production of coke-oven gas by geographic areas for the period under review are shown in table 5 and table 6 gives the quantities recovered, used, sold, and wasted. It will be noted in table 7 that the proportion of coke-oven gas used in heating the ovens decreased rapidly in the early twenties but since 1929 has remained fairly constant. The increase in the proportion of surplus gas (sold or used by the producers) which occurred in the twenties may be attributed to better oven design and also to the utilization of lean gases, either manufactured (producer gas and water gas) or obtained as a byproduct (blast furnace gas) for firing the ovens and thereby releasing larger quantities of surplus coke-oven gas.

The financial rêturns from the sale of surplus coke-oven gas have contributed about 50 percent of the total revenue derived from the sales of all coal-chemical materials since 1921 (table 9). The total value of the surplus gas sold or used by the producers increased from $16,650,195 in 1919 to a record of $94,122,400 in 1944. As shown in table 2 the average unit value of coke-oven gas increased from $0.662 per MCF in 1919 to a peak of $1.924 per MCF in 1934. The average unit value of surplus gas is governed largely by the proportion of gas sold for distribution through city mains as this gas always commands higher prices than that which is used under boilers and in steel or affiliated plants. This **accounts for the higher unit value in 1934 when larger proportional quantities were distributed through city mains due to the availability of coke-oven gas and reduced industrial activity compared with smaller proportions** in war and post-**war years.**

TABLE 5. - COKE-OVEN GAS PRODUCED IN THE UNITED STATES, BY REGIONS, 1919, 1924, 1929, 1934, AND 1939-46,
IN M CUBIC FEET

Year	New England	Middle Atlantic	Ohio	Illinois-Indiana	Lake Dock	South-eastern	Western	Total
1919 ...	6,275,534	119,350,302	79,522,983	120,534,177	31,882,891	51,161,527	6,927,684	415,655,098
1924 ...	8,073,303	186,450,523	96,033,917	104,140,580	41,833,446	92,977,225	11,592,056	541,101,050
1929 ...	19,815,985	343,147,383	133,951,302	161,217,026	62,984,823	106,137,488	15,894,082	843,148,089
1934 ...	30,798,378	204,599,463	64,572,743	67,797,721	57,938,176	61,659,781	6,215,489	493,581,751
1939 ...	27,459,593	287,094,793	90,969,431	105,783,761	56,959,843	95,339,077	11,536,703	675,143,201
1940 ...	29,618,751	357,789,093	115,790,271	140,180,820	62,336,732	112,890,889	15,155,164	833,761,720
1941 ...	29,450,940	369,822,387	136,262,944	162,357,289	63,712,169	114,271,367	16,942,715	892,819,811
1942 ...	30,374,071	383,777,871	143,321,823	162,844,852	71,127,277	135,842,766	17,590,977	944,879,637
1943 ...	30,155,659	389,933,688	147,284,316	168,100,809	66,383,748	133,660,200	24,936,098	960,454,518
1944 ...	29,911,940	400,769,288	147,228,831	183,937,669	64,962,603	142,366,399	39,623,196	1,008,799,926
1945 ...	28,510,990	357,440,572	130,253,370	164,360,889	59,306,469	130,123,009	34,480,819	904,476,118
1946 ...	25,425,561	309,959,364	118,128,622	139,375,858	55,096,049	111,854,588	23,796,974	783,637,016

TABLE 6. - COKE-OVEN GAS PRODUCED IN THE UNITED STATES AND METHOD OF DISPOSAL, 1919, 1924, 1929, 1934, AND 1939-46,
IN M CUBIC FEET

Year	Produced	Used in heating ovens		Disposal of surplus coke-oven gas				
					Used			
		Quantity	Percent of total	Distributed through city mains	In steel or affiliated plants	Under boilers or other coke plant equipment	Sold for industrial purposes	Wasted
1919 ...	415,655,098	212,222,098	51.1%	54,703,000	(1)	(1)	138,121,000	10,609,000
1924 ...	541,101,050	229,298,247	42.4	65,676,867	187,171,883	29,794,046	18,561,057	10,598,950
1929 ...	843,148,089	316,800,622	37.6	160,560,921	302,165,465	18,506,502	26,357,691	18,756,888
1934 ...	493,581,751	175,868,523	35.6	144,308,149	119,716,459	29,324,006	16,222,743	8,141,871
1939 ...	675,143,201	232,864,056	34.5	144,876,573	237,890,694	28,714,866	22,229,157	8,567,855
1940 ...	833,761,720	297,566,103	35.7	151,688,271	305,890,735	36,498,403	29,563,146	12,555,062
1941 ...	892,819,811	328,137,246	36.8	159,746,453	330,452,000	31,404,684	32,523,312	10,556,116
1942 ...	944,879,637	344,412,807	36.5	169,530,544	335,290,705	49,414,260	31,219,576	15,011,745
1943 ...	960,454,518	350,762,774	36.5	169,788,941	345,418,565	39,870,361	37,197,507	17,416,370
1944 ...	1,008,799,926	373,024,121	37.0	170,313,905	384,933,114	30,111,380	35,803,212	14,614,194
1945 ...	904,476,118	337,128,344	37.3	166,178,375	324,294,221	32,061,903	31,718,913	13,094,362
1946 ...	783,637,016	293,685,525	37.5	157,234,511	265,545,711	29,473,813	28,235,551	9,461,905

1/ Probably included with "Sold for industrial purposes."

TABLE 7. - DISPOSAL OF COKE-OVEN GAS, 1919, 1924, 1929, 1934, AND 1939-46, IN PERCENT

Year	Burned in coking process	Surplus sold or used otherwise	Wasted
1919	51.0%	46.4%	2.6%
1924	42.4	55.6	2.0
1929	37.6	60.2	2.2
1934	35.6	62.8	1.6
1939	34.5	64.2	1.3
1940	35.7	62.8	1.5
1941	36.7%	62.1%	1.2%
1942	36.4	62.0	1.6
1943	36.5	61.7	1.8
1944	37.0	61.6	1.4
1945	37.3	61.3	1.4
1946	37.5	61.3	1.2

TABLE 8. - DISPOSAL OF SURPLUS COKE-OVEN GAS, 1919, 1924, 1929, 1934, AND 1939-46
(Gas used in heating ovens or wasted not included)

Year	Surplus gas (M cubic feet)	Disposal			
		Distributed through city mains	In steel or affiliated plants	Under boilers or other coke plant equipment	Sold for industrial purposes
1919	192,824,094	28.4%	(1)	(1)	71.6%
1924	301,203,853	21.8	62.1%	9.9%	6.2
1929	507,590,579	31.6	59.5	3.7	5.2
1934	309,571,357	46.6	38.7	9.5	5.2
1939	433,711,290	33.4	54.9	6.6	5.1
1940	523,640,555	23.0	58.4	7.0	5.6
1941	554,126,449	28.8%	59.6%	5.7%	5.9%
1942	585,455,085	29.0	57.3	8.4	5.3
1943	592,275,374	28.7	58.3	6.7	6.3
1944	621,161,611	27.4	62.0	4.8	5.8
1945	554,253,412	30.0	58.5	5.8	5.7
1946	480,489,586	32.7	55.3	6.1	5.9

1/ Included with "Sold for industrial purposes."

TABLE 9. - RELATIONSHIP OF VALUE OF SURPLUS GAS SOLD OR USED BY COKE-OVEN OPERATORS TO VALUE OF ALL COAL-CHEMICAL MATERIALS SOLD, 1919, 1924, 1929, 1934, AND 1939-46

Year	Value of surplus gas sold or used	Value of all coal-chemical materials	Percent of total value from surplus gas
1919	$16,650,195	$63,727,790	26.1%
1924	49,784,947	103,802,507	48.0
1929	84,304,270	163,675,571	51.5
1934	59,258,839	92,865,828	63.8
1939	71,876,455	124,814,434	57.6
1940	81,402,047	145,081,877	56.1
1941	85,040,609	158,809,184	53.5%
1942	88,823,807	176,932,465	50.2
1943	88,620,185	181,929,705	48.7
1944	94,122,400	185,995,242	50.6
1945	87,745,022	172,138,205	51.0
1946	83,184,679	157,389,875	52.9

TABLE 10. - DISPOSAL OF SURPLUS COKE-OVEN GAS BY MERCHANT AND FURNACE PLANTS, 1919, 1924, 1929, 1934, AND 1939-46, IN THOUSANDS OF CUBIC FEET

Year	Used by producer -											
	Under boilers						In steel or affiliated plants					
	At merchant plants			At furnace plants			At merchant plants			At furnace plants		
	Quantity	Value	Average	Quantity	Value	Average	Quantity	Value	Average	Quantity	Value	Average
1919 ...	(1)	(1)	.....	(1)	(1)	.....	(1)	(1)	.....	(1)	(1)	.....
1924 ...	8,729,409	$377,206	$0.043	21,064,637	$1,351,807	$0.064	....	....	.....	187,171,883	$21,007,607	$0.112
1929 ...	7,369,668	546,457	.074	11,136,834	735,870	.066	969,959	$154,715	$0.160	301,195,506	31,746,789	.105
1934 ...	8,896,526	560,481	.063	20,427,480	2,313,092	.113	741,817	81,777	.110	118,974,642	10,920,087	.092
1939 ...	5,958,426	417,313	.070	22,756,440	1,549,829	.068	6,416,013	566,038	.088	231,474,681	23,735,022	.103
1940 ...	8,222,236	647,596	.079	28,276,167	2,000,732	.071	7,934,172	712,337	.090	297,956,563	30,459,338	.102
1941 ...	9,910,551	721,781	.073	21,494,133	1,643,878	.076	8,042,159	731,947	.091	322,409,841	33,716,933	.105
1942 ...	12,254,649	948,242	.077	27,521,412	2,379,821	.086	11,748,935	956,815	.081	333,179,969	34,641,194	.104
1943 ...	9,944,508	712,530	.072	18,684,340	1,605,306	.086	13,767,606	1,105,330	.080	342,892,472	35,310,167	.103
1944 ...	6,801,251	530,472	.078	23,310,129	2,115,379	.091	13,112,419	1,264,546	.096	371,820,695	40,681,876	.109
1945 ...	5,854,028	493,849	.084	26,207,875	2,604,501	.099	10,700,637	1,033,529	.097	313,593,584	35,939,071	.115
1946 ...	6,750,703	747,900	.111	22,723,110	2,559,301	.113	6,609,132	842,374	.127	258,936,579	30,329,744	.117

Year	Sold											
	Distributed through city mains						For industrial purposes					
	From merchant plants			From furnace plants			From merchant plants			From furnace plants		
	Quantity	Value	Average	Quantity	Value	Average	Quantity	Value	Average	Quantity	Value	Average
1919 ...	2/46,487,450	$7,631,619	$0.164	2/8,215,637	$940,134	$0.114	8,564,274	$429,000	$0.050	129,556,733	$7,649,442	$0.059
1924 ...	47,224,266	20,077,733	.425	18,452,601	3,408,683	.185	6,074,684	2,280,881	.375	12,486,373	1,281,030	.103
1929 ...	115,934,449	38,344,102	.331	44,626,472	8,650,530	.194	12,907,233	2,405,809	.186	13,450,458	1,719,998	.128
1934 ...	116,679,201	36,772,872	.315	27,628,948	6,152,703	.223	9,000,216	1,325,989	.147	7,222,527	1,131,838	.157
1939 ...	107,542,354	34,835,122	.324	37,334,219	8,056,248	.216	14,569,173	1,898,750	.130	7,659,984	818,133	.107
1940 ...	110,869,308	35,306,372	.318	40,818,963	8,625,520	.211	17,392,923	2,386,297	.137	12,170,223	1,263,855	.104
1941 ...	113,804,836	34,611,865	.304	45,941,617	9,496,932	.207	19,299,386	2,816,749	.146	13,223,926	1,300,524	.098
1942 ...	120,185,225	35,854,767	.298	49,345,319	9,927,667	.201	19,133,279	2,904,180	.152	12,086,297	1,211,121	.100
1943 ...	117,690,158	34,444,537	.293	52,098,783	10,149,673	.195	19,940,427	3,199,759	.160	17,257,080	2,092,883	.121
1944 ...	116,613,951	34,707,240	.298	53,699,954	9,987,614	.186	21,218,839	3,099,694	.146	14,584,373	1,735,579	.119
1945 ...	113,585,983	33,866,855	.298	52,592,392	9,665,230	.184	17,340,080	2,304,854	.133	14,378,833	1,837,133	.128
1946 ...	107,982,090	35,555,286	.329	49,252,421	9,373,411	.190	15,012,978	2,003,891	.133	13,222,573	1,772,772	.134

1/ Included with "Sold for industrial purposes." 2/ Includes figures classified as "For illuminating and household purposes" and "To public service corporations."

COKE-OVEN TAR AND ITS DERIVATIVES

Crude coal tar: High-temperature coke-oven tar is a black, rather thick, and viscous liquid at ordinary temperature and is composed of a mixture of many different compounds. It is supposed that high-temperature coal tars contain over 200 definite chemical compounds, of which a far smaller number have been separated in pure condition and identified. In the early days of the oven-coke industry in the United States, most of the crude coal tar produced was used in its crude form by producers, mainly as fuel for open-hearth furnaces, with relatively small quantities used for boiler fuel and other miscellaneous uses. Precise statistics on the disposal of coke-oven tar were not collected prior to 1929. The expansion in carbonizing capacity during and immediately after World War I greatly increased the production of tar and several companies operated solely for the purpose of processing tar and marketing the products. In general, each of the processing companies operated distilling plants centrally located with respect to sources of tar supply. In the latter part of the 20's, some of the coke-plant operators started to partially refine or "top" their tar and by 1929 over 43 million gallons were processed at coke plants. In this way the tar acids and other distillates were recovered and sold and the resulting soft pitch utilized as fuel. As the markets for tar products increased, the quantities of tar refined by producers or sold for refining to other purchasers increased steadily and the proportion of crude tar burned as fuel diminished. Thus the percentage of crude tar burned as fuel declined from 44 percent of the production in 1929 to 11 percent in 1946. During this period the proportion refined or "topped" by coke-oven operators increased from about 6 percent of the total output in 1929 to 26 percent in 1946. Sales of coke-oven tar to **independent tar refineries** increased from 42 to 62 percent in the same period.

Coal-tar derivatives: The principal commercial products obtained by coke-plant operators are tar acid oil and creosote oil. Roughly 60 percent of the crude tar processed remains as pitch. The disposal of the large quantities of pitch has always been more or less a problem to the coke plant operator and it is usually used as a fuel. This accounts for the small quantities sold as shown in table 14. Creosote oil, a tar distillate having a boiling range from 200°C to 355°C and used mainly for impregnating wood against decay, is the most important tar derivative produced at coke plants accounting for about 55 percent of the revenue obtained from the sale of all tar derivatives. Although the quantity of creosote oil produced by coke-oven operators has increased sharply in the past decade, only about one-third of the total United States' production is produced by them as the bulk of the production comes from independent tar refineries. The partial refining or topping of tar at coke plants, as mentioned in a previous discussion, has been increasing in the past decade and output of tar acid oil and tar acids have likewise increased. Beginning in 1941 the Bureau started the collection of statistics on tar acid oil, phenol, and cresols but as there are less than three producers processing the tar distillate fractions for the recovery of phenol, cresols, and cresylic acid, figures are not publishable. Statistics on the output of tar acid oil, however, have been published since 1941 and are shown in table 14.

TABLE 11. - COKE-OVEN TAR PRODUCED IN THE UNITED STATES, BY REGIONS, 1919, 1924, 1929, 1934, AND 1939-46, IN GALLONS

Year	New England	Middle Atlantic	Ohio	Illinois-Indiana	Lake Dock	South-eastern	Western	Total
1919 ...	5,482,604	105,852,624	67,761,675	46,254,015	22,862,108	34,691,100	5,997,613	288,901,739
1924 ...	6,510,859	161,711,283	75,976,098	65,106,785	30,592,186	72,448,988	9,728,127	422,074,326
1929 ...	14,983,447	311,350,662	108,062,552	99,822,300	44,946,730	87,475,818	14,222,857	680,864,366
1934 ...	20,608,638	182,233,516	55,486,262	49,122,725	41,231,142	54,921,524	5,106,507	408,710,314
1939 ...	20,384,354	258,601,856	73,781,686	70,134,925	42,458,208	78,740,724	10,304,463	554,406,216
1940 ...	21,129,753	316,511,162	90,135,541	90,740,082	46,879,189	94,498,180	13,392,610	673,286,517
1941 ...	20,800,443	324,363,487	101,792,613	99,905,512	46,426,628	96,090,585	14,770,200	704,149,468
1942 ...	21,326,071	333,360,928	105,975,336	102,979,320	49,431,110	111,873,612	15,229,242	740,175,619
1943 ...	21,674,213	329,277,732	103,519,980	107,411,658	45,855,679	108,773,740	21,653,966	738,166,968
1944 ...	21,481,484	337,137,948	106,997,204	110,824,333	44,666,082	113,396,877	33,303,243	767,807,171
1945 ...	19,653,770	300,614,514	93,228,898	101,946,350	42,597,609	106,594,201	31,671,969	696,307,311
1946 ...	18,123,099	256,663,298	82,326,943	86,918,366	38,375,073	92,476,884	21,985,082	596,868,745

TABLE 12. - AVERAGE NUMBER OF GALLONS OF COKE-OVEN TAR PRODUCED PER TON OF COAL COKED, BY STATES, 1919, 1924, 1929, 1934, AND 1939-46

State	1919	1924	1929	1934	1939	1940	1941	1942	1943	1944	1945	1946
Alabama	7.51	8.22	9.10	9.54	8.64	8.58	8.49	8.47	8.36	8.31	8.26	7.97
California	.....	.....	.....	.....	.....	.....	.....	.....	10.92	10.71	10.48	10.13
Colorado	9.58	9.50	9.68	10.90	10.91	10.69	10.78	10.50	10.38	10.60	10.47	10.28
Illinois	5.78	7.95	7.57	8.88	8.33	7.90	7.43	7.43	7.63	6.95	6.84	6.71
Indiana	5.89	6.06	5.96	6.80	6.46	6.22	5.85	6.06	5.87	5.82	6.02	5.94
Maryland	6.30	6.84	7.44	7.61	8.29	7.69	7.86	7.81	7.67	7.56	7.08	7.38
Massachusetts	8.26	8.25	8.19	8.31	8.46	8.18	7.83	7.72	7.85	7.73	7.33	7.55
Michigan	7.17	7.56	8.19	8.55	8.89	8.44	8.12	7.95	7.64	7.36	7.31	7.20
Minnesota	7.41	8.40	7.96	8.12	8.66	8.69	7.89	6.66	6.61	6.56	7.00	6.34
New Jersey	10.31	8.41	8.13	7.89	8.09	8.19	8.23	8.14	7.97	7.63	6.81	7.42
New York	8.05	8.66	9.04	9.53	9.58	9.14	8.98	8.88	8.50	8.35	8.27	8.09
Ohio	8.70	9.02	8.77	9.09	8.55	8.16	7.85	7.72	7.25	7.44	7.06	6.90
Pennsylvania	9.57	9.91	10.68	10.69	10.57	10.22	10.03	9.82	9.62	9.59	9.23	9.10
Tennessee	7.95	8.86	6.85	5.69	7.25	7.37	6.90	7.18	6.95	6.81	7.44	7.55
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.33	8.35	.....
Utah	.....	10.38	11.40	10.04	11.50	11.66	11.24	11.14	10.62	10.39	11.85	11.36
Washington	6.72	8.24	8.30	6.80	.....	.....	.....	.....	10.33	.....	.....	.....
West Virginia	9.14	11.28	10.10	11.53	11.07	11.11	11.05	10.50	10.34	10.28	10.27	10.50
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	7.41	8.25	7.49	7.81	8.09	8.17	8.17	7.98	7.89	7.72	7.28	7.21
	8.06	8.60	8.87	9.22	9.06	8.79	8.52	8.41	8.20	8.13	7.95	7.82
At merchant plants	7.68	7.18	8.27	8.75	8.79	8.72	8.62	8.59	8.40	8.19	7.81	7.72
At furnace plants	8.17	8.96	9.04	9.49	9.15	8.81	8.49	8.36	8.14	8.11	7.99	7.85

TABLE 13. - COKE-OVEN TAR PRODUCED IN THE UNITED STATES, USED BY PRODUCER, AND SOLD, 1919, 1924, 1929, 1934, AND 1939-46, IN THOUSANDS OF GALLONS

Year	Produced		Used by producer					Sold			
	Total	Yield per ton of coal coked	Burned	Percent of production	Refined	Percent of production	Otherwise 1/	For refining	Percent of production	As fuel	Percent of production
1919 ...	288,902	8.06	....	.....	....	.....	.....	2/217,707	75.4	....	.....
1924 ...	422,074	8.60	213,474	50.6	....	.....	611	2/209,980	49.7	....	.....
1929 ...	680,864	8.87	298,050	43.8	43,019	6.3	1,146	285,069	41.9	48,489	7.1
1934 ...	408,710	9.22	107,630	26.3	36,344	8.9	1,291	236,466	57.9	37,298	9.1
1939 ...	554,406	9.06	90,021	16.2	111,783	20.2	877	278,392	50.0	66,143	11.9
1940 ...	673,287	8.79	175,954	26.1	151,545	22.5	1,409	311,049	46.2	39,643	5.9
1941 ...	704,149	8.52	139,316	19.8	184,197	26.2	1,401	377,791	53.7	14,749	2.1
1942 ...	740,176	8.41	95,565	12.9	194,692	26.3	1,671	443,008	59.9	2,590	.3
1943 ...	738,167	8.20	87,201	11.8	204,628	27.7	4,423	440,859	59.7	14,780	2.0
1944 ...	767,807	8.13	157,598	20.5	200,570	26.1	5,166	391,338	51.0	15,851	2.1
1945 ...	696,307	7.95	107,794	15.5	178,575	25.6	3,633	383,871	55.1	26,628	3.8
1946 ...	596,869	7.82	65,753	11.0	155,061	26.0	2,781	367,037	61.5	10,962	1.8

1/ For miscellaneous purposes such as tarring ingot moulds, making tar paint, etc. 2/ Total tar sold, purpose unspecified.

TABLE 14. - COKE-OVEN TAR REFINED BY PRODUCERS AND CREOSOTE OIL, TAR ACID OIL, AND PITCH OF TAR RECOVERED, 1919, 1924, 1929, 1934, AND 1939-46

Year	Tar refined 1/ (gallons)	Creosote oil			Tar acid oil			Pitch of tar		
		Produced (gallons)	Sold		Produced (gallons	Sold		Produced (pounds)	Sold	
			Gallons	Average value per gallon		Gallons	Average value per gallon		Pounds	Average value per pound
1919 ...	(2)	(2)	(2)	.....	(2)	(2)	.....	(2)	(2)	.....
1924 ...	(2)	(2)	(2)	.....	(2)	(2)	.....	(2)	(2)	.....
1929 ...	43,019,024	26,730,126	23,938,431	$0.096	(2)	(2)	.....	176,314,934	11,197,224	$0.002
1934 ...	36,343,769	12,408,010	5,500,485	.083	(2)	(2)	.....	195,795,142	9,874,194	.003
1939 ...	111,782,843	19,455,849	13,573,393	.108	(2)	(2)	.....	430,828,382	4,218,231	.003
1940 ...	151,545,371	29,600,468	17,722,398	.110	(2)	(2)	.....	614,079,900	3,486,860	.003
1941 ...	184,197,206	40,332,579	39,235,286	.117	11,675,741	11,794,218	$0.115	728,244,354	6,634,200	.004
1942 ...	194,692,227	42,219,837	40,604,985	.119	17,921,998	11,340,244	.137	1,276,315,027	17,168,710	.007
1943 ...	204,627,996	43,552,772	40,620,590	.128	15,165,320	15,160,304	.131	1,334,506,205	62,812,840	.007
1944 ...	200,570,084	43,779,321	42,424,697	.120	13,432,235	13,405,255	.118	1,338,449,011	105,328,800	.005
1945 ...	178,575,329	36,831,149	34,933,338	.124	13,800,408	13,657,097	.114	1,173,279,682	17,089,181	.005
1946 ...	155,061,221	31,122,825	29,538,178	.127	12,953,198	13,270,360	.122	1,020,980,869	614,597	.005

1/ Includes tar topped. 2/ Data not collected.

TABLE 15. - PRODUCTION OF CRUDE COAL TAR, 1919, 1924, 1929, 1934, AND 1939-46, IN GALLONS

Year	Coke-oven tar	Retort tar 1/	Medium- and low-temperature tar	Total	Percent from coke ovens
1919	288,901,739	53,146,421	(2)	342,048,160	84.5%
1924	422,074,326	53,000,000	(2)	475,074,326	88.8
1929	680,864,366	56,000,000	(2)	736,864,366	92.4
1934	408,710,314	32,000,000	(2)	440,710,314	92.7
1939	554,406,216	20,000,000	(3)	574,406,216	96.5
1940	673,286,517	22,000,000	(3)	695,286,517	96.8
1941	704,149,468	22,000,000	(3)	726,149,468	97.0
1942	740,175,619	21,091,829	(3)	761,267,448	97.2
1943	738,166,968	19,848,868	(3)	758,015,836	97.4
1944	767,807,171	19,719,133	3,893,646	791,419,950	97.0
1945	696,307,311	19,836,840	3,200,332	719,344,483	96.8
1946	596,868,745	17,464,392	1,931,688	616,264,825	96.9

1/ 1919 and 1929, Bureau of the Census; 1924 and 1934-41, estimated by authors; 1942-46, Bureau of Mines. 2/ Not available. 3/ Included with coke-oven tar.

CRUDE LIGHT OIL AND DERIVATIVES

Crude light oil is a term used in the coke industry to designate a mixture of products derived from the coking process, the boiling points of which do not exceed 200°C. It consists principally of benzol, toluol, and their homologs. The general method of recovering crude light oil in the United States is by scrubbing the coke-oven gas (freed from tar and ammonia) with a petroleum oil generally called "straw oil" or benzol wash oil. Between 90 and 95 percent of the "total light oil" produced in coal carbonizing is recovered by scrubbing the gas, less than 5 percent is found in the tar, and the balance passes out with the scrubbed gas. Table 16 shows the production of crude light oil by geographic areas. The yield of crude light oil per ton of coal carbonized increased notably between 1919 and 1939 but since that year has declined steadily.

Since World War I when the recovery of light-oil products became an important part of the coke industry, there has been considerable variation in the demands for the different kinds of products into which crude light oil can be refined. Table 20 shows the trend in the relative yields of the light oil products. The need for explosives in World War I stimulated the demand for toluol and benzol, and as coke ovens were the only source of these important chemicals at that time the output from ovens increased greatly. After the war the demand for toluol for the manufacture of explosives diminished but the demand for benzol for blending with gasoline for use in internal combustion engines increased because of its high "anti-knock" properties and the greatest proportion of the crude light oil was refined into the "motor benzol" grade. This practice was employed until the beginning of World War II when the requirements for pure benzol and pure toluol (essential raw materials in the manufacture of explosives, synthetic rubber, aviation gasoline, plastics, and other war materials) soared to unprecedented levels, thereby curtailing the production of motor benzol. However, in World War II, coke ovens were not the principal source of toluol as technological developments in the refining of petroleum enabled this country to obtain most of its toluol from petroleum; coke ovens supplying about one-fourth of the total requirements. After the second world war, the production of toluol dropped sharply to prewar levels, while the production of aniline, phenol, styrene, and cylic intermediates generally continued at the wartime pace and production of industrial benzol, the essential raw material, continued at an extremely high rate. Table 3 shows the trend in the prices received for the light oil products since 1919.

Naphthalene is currently recovered at coke plants from the refining of crude light oil and of tar, and from the final coolers. However, since more than 50 percent of the naphthalene recovered by coke-plant operators is obtained from light oil, statistics on this chemical are shown with the light oil derivatives. The amount of crude naphthalene produced at coke plants depends in large measure upon the price which this and related products command. As a source of revenue to the coke-oven operator, naphthalene is of small consequence, but as a raw material for the manufacture of alkyd resins, dyestuffs, and organic chemicals it occupies an important place. Table 22 shows the production and sales of this commodity and indicates the receipts per ton of coke produced.

TABLE 16. - COKE-OVEN CRUDE LIGHT OIL PRODUCED IN THE UNITED STATES, BY REGIONS, 1919, 1924, 1929, 1934, AND 1939-46, IN GALLONS

Year	New England	Middle Atlantic	Ohio	Illinois-Indiana	Lake Dock	South-eastern	Western	Total
1919 ...	....	30,073,959	26,769,494	17,716,848	6,704,278	10,716,825	1,622,718	93,604,122
1924 ...	....	46,600,225	27,154,392	21,121,543	6,957,772	23,961,578	3,161,445	128,956,955
1929 ...	....	84,081,433	38,165,645	33,616,063	11,760,505	28,230,731	4,739,650	200,594,027
1934 ...	3,857,194	49,235,795	18,402,089	15,292,835	10,860,279	16,480,572	1,565,984	115,694,748
1939 ...	5,163,319	75,968,666	25,183,749	23,647,681	11,119,102	26,503,065	3,377,617	170,963,199
1940 ...	5,792,802	95,707,319	33,339,187	31,820,596	13,073,786	31,146,610	4,333,367	215,213,667
1941 ...	5,635,760	102,497,624	38,486,781	35,614,237	12,643,935	31,790,887	4,689,673	231,353,897
1942 ...	5,944,261	108,757,998	40,018,828	35,558,556	15,296,945	35,694,772	4,753,522	246,024,882
1943 ...	6,057,767	108,339,155	39,570,043	37,386,589	15,831,445	37,056,025	6,270,071	250,511,095
1944 ...	5,976,009	110,566,543	41,107,887	44,209,162	15,622,078	39,660,547	10,719,758	267,861,984
1945 ...	5,516,398	101,177,792	36,633,837	41,099,955	13,954,991	36,596,736	10,707,544	245,687,253
1946 ...	3,900,777	86,491,212	32,749,525	33,078,669	11,410,737	31,743,177	7,540,236	206,914,333

TABLE 17. - AVERAGE NUMBER OF GALLONS OF COKE-OVEN CRUDE LIGHT OIL PER TON OF COAL COKED, BY STATES, 1919, 1924, 1929, 1934, AND 1939-46

State	1919	1924	1929	1934	1939	1940	1941	1942	1943	1944	1945	1946
Alabama	2.17	2.70	2.92	2.94	3.00	2.88	2.92	2.88	2.74	2.85	2.82	2.77
California	....	....	....	....	....	....	....	....	2.52	3.87	3.36	3.53
Colorado	2.73	3.32	3.28	3.36	3.38	3.29	3.17	3.00	3.10	3.56	3.28	3.12
Illinois	2.11	2.67	2.56	2.48	2.55	2.43	2.39	2.45	2.56	2.68	2.65	2.64
Indiana	2.45	2.44	2.70	2.89	2.59	2.63	2.46	2.44	2.19	2.42	2.53	2.25
Maryland	1.77	1.94	2.52	3.49	3.31	3.43	3.44	3.59	3.62	4.04	3.97	3.87
Michigan	2.32	2.10	2.53	2.55	2.95	2.83	2.84	2.94	2.94	2.85	2.83	2.74
New York	2.65	2.98	2.74	2.29	2.55	2.69	2.62	2.75	2.73	2.50	2.60	2.56
Ohio	3.44	3.27	3.10	3.02	2.92	3.02	2.97	2.91	2.77	2.86	2.78	2.75
Pennsylvania	2.73	3.13	3.19	3.40	3.44	3.14	3.19	3.16	3.10	3.09	3.02	3.02
Tennessee	2.53	2.90	2.42	2.50	2.44	2.41	2.34	2.10	2.40	2.65	2.55	2.46
Texas	....	....	....	....	....	....	....	....	....	2.96	2.47	....
Utah	....	3.46	4.08	3.60	4.14	4.16	4.17	4.17	4.07	3.18	4.32	4.28
West Virginia	3.21	3.67	3.15	3.11	3.46	3.48	3.42	3.21	3.66	3.65	3.47	3.48
Connecticut, Kentucky, Massachusetts, Minnesota, Missouri, New Jersey, and Wisconsin	2.56	2.43	2.19	2.53	2.45	2.52	2.48	2.34	2.47	2.42	2.20	2.14
	2.72	2.89	2.93	2.90	2.99	2.93	2.90	2.88	2.83	2.87	2.84	2.77
At merchant plants	2.44	2.19	2.46	2.36	2.48	2.43	2.53	2.61	2.53	2.50	2.35	2.21
At furnace plants	2.79	3.00	3.02	3.14	3.12	3.05	2.99	2.96	2.91	2.96	2.97	2.93

TABLE 18. - COKE-OVEN CRUDE LIGHT OIL PRODUCED, REFINED, AND DERIVED PRODUCTS OBTAINED, 1919, 1924, 1929, 1934, AND 1939-46, IN GALLONS

Year	Produced	Yield per ton of coal coked	Refined on premises	Derived products obtained
1919 ...	93,604,122	2.72	(1)	92,046,906
1924 ...	128,956,955	2.89	125,580,743	100,928,015
1929 ...	200,594,027	2.93	194,882,679	163,018,085
1934 ...	115,694,748	2.90	108,219,464	94,570,139
1939 ...	170,963,199	2.99	163,947,167	139,805,191
1940 ...	215,213,667	2.93	207,272,848	177,794,631
1941 ...	231,358,897	2.90	225,294,298	194,713,669
1942 ...	246,024,882	2.88	241,854,110	206,155,160
1943 ...	250,511,095	2.83	245,893,002	208,932,084
1944 ...	267,861,984	2.87	259,544,535	222,436,683
1945 ...	245,687,253	2.84	234,802,231	202,669,566
1946 ...	206,914,333	2.77	198,593,963	171,607,226

1/ Not available.

TABLE 19. - LIGHT-OIL DERIVATIVES PRODUCED AT OVEN-COKE PLANTS, 1919, 1924, 1929, 1934, AND 1939-46, IN GALLONS

Year	Benzol		Toluol crude and refined	Xylol	Solvent naphtha	Other light-oil derivatives
	Motor	All other grades				
1919 ...	44,544,311	17,006,532	1,160,136	(1)	3,920,489	575,885
1924 ...	73,768,811	18,135,025	3,185,431	(1)	4,474,220	1,364,528
1929 ...	105,923,762	24,944,531	18,343,295	(2)	7,131,111	6,675,386
1934 ...	50,046,610	21,690,879	13,281,794	2,736,295	3,048,744	3,765,817
1939 ...	79,607,150	25,305,714	19,767,200	4,089,090	4,788,836	6,247,201
1940 ...	101,140,079	31,880,556	26,406,407	5,645,993	5,220,979	7,500,617
1941 ...	106,372,015	37,883,480	29,337,178	7,619,200	5,283,034	8,218,762
1942 ...	64,797,595	85,256,998	32,314,560	9,332,273	5,215,617	9,238,117
1943 ...	21,267,932	132,439,174	32,272,593	8,763,927	5,232,848	8,955,610
1944 ...	18,556,555	146,909,883	33,528,232	8,668,740	5,564,012	9,209,261
1945 ...	28,788,072	126,670,542	27,069,321	7,504,115	4,802,748	7,834,768
1946 ...	27,398,866	109,728,963	16,519,763	5,986,250	4,401,158	7,572,226

1/ Data not collected. 2/ Included with solvent naphtha.

TABLE 20. - TREND IN YIELDS OF PRODUCTS OBTAINED FROM REFINING CRUDE LIGHT OIL AT OVEN-COKE PLANTS, 1919, 1924, 1929, 1934, AND 1939-46, IN PERCENT

Year	Benzol		Toluol crude and refined	Xylol	Solvent naphtha	Other light oil products
	Motor	All other grades				
1919 ...	(1)	(1)	(1)	(1)	(1)	(1)
1924 ...	61.8	11.4	2.5	(1)	3.6	1.1
1929 ...	54.4	12.8	9.4	(2)	3.7	3.4
1934 ...	46.2	20.0	12.3	2.5	2.8	3.5
1939 ...	48.6	15.4	12.1	2.5	2.9	3.8
1940 ...	48.8	15.4	12.7	2.7	2.5	3.6
1941 ...	47.2	16.8	13.0	3.4	2.3	3.6
1942 ...	26.8	35.3	13.4	3.9	2.2	3.8
1943 ...	8.6	53.9	13.1	3.6	2.1	3.6
1944 ...	7.1	56.6	12.9	3.3	2.1	3.5
1945 ...	12.3	53.9	11.5	3.2	2.0	3.3
1946 ...	13.8	55.3	8.3	3.0	2.2	3.8

1/ Not available. 2/ Included with solvent naphtha.

TABLE 21. - BENZOL AND TOLUOL PRODUCED AT OVEN-COKE PLANTS, BY GRADES, 1941-46, IN GALLONS

Year	Benzol				Toluol		
	Motor	Nitration or 1°	Pure commercial or 2°	All other	Nitration or 1°	Pure commercial or 2°	All other
1941 ...	106,372,000	15,414,500	18,286,400	4,182,600	14,689,800	13,268,500	1,378,900
1942 ...	64,797,600	25,624,400	53,617,900	6,014,700	25,160,200	5,044,800	2,109,600
1943 ...	21,267,900	35,047,800	93,246,600	4,144,800	27,152,300	2,394,700	2,725,600
1944 ...	18,556,600	41,285,800	102,436,500	3,187,600	29,771,100	2,149,600	1,607,500
1945 ...	28,788,100	39,166,500	86,237,300	1,266,700	23,355,400	2,219,700	1,494,200
1946 ...	27,398,900	35,739,300	71,681,700	2,308,000	12,518,000	2,796,400	1,205,400

TABLE 22. - PRODUCTION AND SALES OF NAPHTHALENE BY COKE-PLANT OPERATORS, 1919, 1924, 1929, 1934, AND 1939-46

Year	Production (pounds)	Sales		Average receipts per pound	Receipts per ton of coke
		Quantity (pounds)	Value		
1919 .	6,343,269	6,702,040	$191,364	$0.029	$0.008
1924 .	8,391,968	8,219,073	128,208	.016	.004
1929 .	19,761,382	19,659,367	320,272	.016	.006
1934 .	10,743,471	10,500,285	131,299	.013	.004
1939 .	48,460,171	46,551,432	727,947	.016	.017
1940 .	72,426,443	72,522,476	1,248,051	.017	.023
1941 .	84,046,676	83,879,396	$1,522,518	$0.018	$0.026
1942 .	95,612,788	95,039,639	1,941,626	.020	.031
1943 .	98,096,899	98,031,058	2,088,829	.021	.033
1944 .	103,041,023	103,839,789	2,094,596	.020	.031
1945 .	87,677,299	86,936,517	1,306,967	.021	.029
1946 .	71,605,138	71,769,750	1,602,739	.022	.030

COKE-OVEN AMMONIA

In coal carbonization, ammonia is recovered either as its water solution (ammonia liquor) or as a crystallized ammonium sulfate. Usually about 85 percent of the total ammonia recovered in the coking process is converted to ammonium sulfate and is sold as a fertilizer material. Before and during World War I, coke ovens were the principal source of chemical nitrogen in the United States (**table 25**). This permitted coke-plant operators to obtain high prices for the liquor and sulfate sold and in **1913** ammonia gave the operators the greatest income of the coal chemicals; in World War I the demand for explosives gave the value of light oil and its derivatives a temporary leadership over ammonia which, however, was regained by the latter in 1918 and continued until 1921 when the value of gas forged ahead of the other coal chemicals and ammonia began to decline, a trend which has continued up to the present. This decline may be attributed largely to the great development in the fixation of atmospheric nitrogen by Haber in Germany in 1913 which was introduced in the United States in the middle 20's and now accounts for more than 80 percent of the total output.

Tables 26 and 27 have been prepared to show the production, sales, value of sales, and average unit value at point of production of ammonium sulfate and ammonia liquor according to geographic areas.

TABLE 23. - COKE-OVEN AMMONIA PRODUCED AT MERCHANT PLANTS AND AT FURNACE PLANTS, 1919, 1924, 1929, 1934, AND 1939-46, IN NET TONS

Year	Merchant			Furnace			Total NH_3 equivalent	Total nitrogen content
	Sulfate	Liquor	NH_3 equivalent	Sulfate	Liquor	NH_3 equivalent		
1919 ...	22,978	15,977	21,722	249,174	9,291	71,585	93,307	76,792
1924 ...	44,948	15,998	27,235	401,615	8,517	108,921	136,156	112,056
1929 ...	110,639	21,484	49,144	633,518	6,530	164,910	214,054	176,166
1934 ...	97,442	17,439	41,800	295,280	4,358	78,178	119,978	98,742
1939 ...	101,800	16,131	41,581	478,475	8,001	127,620	169,201	139,252
1940 ...	108,382	18,790	45,886	609,849	9,679	162,141	208,027	171,206
1941 ...	111,512	20,569	48,447	633,686	10,820	169,242	217,689	179,158
1942 ...	116,237	23,009	52,068	650,567	10,919	173,380	225,448	185,544
1943 ...	111,787	20,313	48,260	649,483	13,793	176,164	224,424	184,701
1944 ...	109,503	18,989	46,365	708,741	12,676	189,861	236,226	194,414
1945 ...	105,799	17,338	43,788	658,494	10,269	174,893	218,681	179,974
1946 ...	98,854	16,381	41,095	544,898	8,611	144,836	185,931	153,021

TABLE 24. - AVERAGE NUMBER OF POUNDS OF AMMONIUM SULFATE EQUIVALENT PER TON OF COAL COKED, BY STATES, 1919, 1924, 1929, 1934, AND 1939-46

State	1919	1924	1929	1934	1939	1940	1941	1942	1943	1944	1945	1946
Alabama	20.07	22.68	25.15	26.20	24.58	24.01	24.68	24.03	23.78	23.56	23.22	22.70
California	.....	.....	.....	.....	.....	.....	.....	.....	21.30	27.43	27.41	26.21
Colorado	21.73	20.99	21.56	23.93	23.61	23.46	22.71	23.18	22.36	22.85	22.29	21.42
Illinois	18.44	21.55	21.85	23.13	21.14	20.72	19.40	19.10	19.61	18.77	17.88	19.34
Indiana	17.41	16.23	17.34	18.10	18.39	17.98	16.46	17.10	16.47	17.18	17.74	17.30
Maryland	18.42	19.81	20.44	20.95	22.21	19.98	18.44	17.36	19.19	20.42	21.39	19.98
Massachusetts	19.50	19.20	20.44	22.25	22.95	23.04	20.62	18.49	17.18	17.50	17.16	17.36
Michigan	19.79	24.14	22.02	22.00	21.03	20.89	22.02	21.23	20.99	20.36	20.91	21.03
Minnesota	18.56	20.85	22.42	.....	22.35	22.56	20.61	17.80	17.72	17.55	17.31	16.73
New Jersey	27.17	22.83	22.45	19.88	20.98	20.19	20.86	20.39	19.52	18.09	17.27	18.11
New York	17.30	21.48	22,82	21.97	22.35	21.79	21.17	20.53	20.03	19.15	18.96	19.29
Ohio	23.33	23.78	23.18	21.45	22.27	21.88	20.89	20.42	19.16	19.31	19.03	18.47
Pennsylvania	21.44	23.44	22.96	23.50	23.65	23.48	22.96	22.43	21.75	21.65	21.55	20.76
Tennessee	21.55	26.69	20.08	24.65	26.05	24.39	20.87	19.44	20.68	22.69	22.84	21.85
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.36	26.54	.....
Utah	.....	25.39	28.80	23.93	26.57	27.67	27.61	27.32	26.50	24.89	25.71	25.09
Washington	32.32	32.97	31.44	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	22.76	24.84	23.75	23.62	24.61	24.38	25.20	22.54	23.69	23.52	23.32	21.72
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	20.65	23.38	22.18	21.64	20.83	21.54	21.95	21.04	20.92	19.83	19.73	19.35
	20.82	22.20	22.31	22.29	22.33	22.00	21.34	20.85	20.32	20.29	20.22	19.79
At merchant plants	20.69	21.88	22.93	21.76	22.29	22.22	21.96	21.33	20.76	20.31	19.75	19.73
At furnace plants	20.86	22.28	22.13	22.58	22.34	21.94	21.17	20.71	20.20	20.28	20.34	19.80

TABLE 25. - PRODUCTION OF CHEMICAL NITROGEN FROM ALL SOURCES, 1919, 1924, 1929, 1934, AND 1939-46, NET TONS

Year	Coke ovens	All other sources 1/	Total	Percent of total from coke ovens	Year	Coke ovens	All other sources 1/	Total	Percent of total from coke ovens
1919 ...	76,792	6,208	83,000	92.5%	1941 ...	179,158	414,620	593,778	30.2%
1924 ...	112,056	17,586	129,642	86.4	1942 ...	185,544	582,901	768,445	24.1
1929 ...	176,166	142,713	318,879	55.2	1943 ...	184,701	876,535	1,061,236	17.4
1934 ...	98,742	157,959	256,701	38.5	1944 ...	194,414	1,017,993	1,212,407	16.0
1939 ...	139,252	284,583	423,835	32.9	1945 ...	179,974	881,692	1,061,666	17.0
1940 ...	171,206	329,980	501,186	34.2	1946 ...	153,021	704,152	857,173	17.9

1/ Does not include organic nitrogen from animal and vegetable sources.

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TABLE 26. - PRODUCTION, SALES, AND VALUE OF AMMONIUM SULFATE AT OVEN-COKE PLANTS, BY REGIONS, 1919, 1924, 1929, 1934, AND 1939-46, IN NET TONS

	1919	1924	1929	1934	1939	1940	1941	1942	1943	1944	1945	1946
New England:												
Production	4,658	5,517	18,252	21,888	20,794	22,497	21,337	20,247	19,295	18,944	19,856	18,184
Sales	4,342	5,885	16,867	20,592	21,298	21,930	21,860	20,198	19,603	17,816	20,554	18,351
Value of sales	$382,838	$344,901	$666,394	$435,559	$479,497	$519,086	$633,115	$577,473	$557,764	$507,071	$578,596	$531,459
Average	$88.17	$58.61	$39.51	$21.15	$22.51	$23.67	$28.96	$28.59	$28.45	$28.46	$28.15	$28.96
Middle Atlantic:												
Production	103,818	182,049	337,079	186,183	279,438	347,501	356,220	362,351	358,746	369,200	340,464	284,672
Sales	107,277	188,647	325,827	190,095	281,938	352,949	358,752	345,817	367,456	341,123	372,783	282,951
Value of sales	$7,927,654	$8,811,181	$11,406,923	$3,627,466	$6,440,113	$8,738,036	$9,483,424	$9,042,041	$9,673,971	$8,581,162	$9,423,454	$7,771,871
Average	$73.90	$46.71	$35.01	$19.08	$22.84	$24.76	$26.43	$26.15	$26.33	$25.16	$25.28	$27.47
Ohio:												
Production	76,743	84,991	120,409	47,809	76,954	101,174	113,586	111,791	108,801	111,326	100,029	86,501
Sales	76,510	86,106	116,216	41,886	74,786	103,590	116,616	110,760	109,552	111,603	98,443	88,009
Value of sales	$5,916,387	$4,257,287	$4,030,285	$789,284	$1,692,664	$2,506,057	$2,929,372	$2,740,824	$2,730,709	$2,705,217	$2,408,450	$2,397,920
Average	$77.33	$49.44	$34.68	$18.84	$22.63	$24.19	$25.12	$24.75	$24.93	$24.24	$24.47	$27.25
Illinois-Indiana:												
Production	42,704	61,605	115,464	52,875	81,614	106,305	112,021	116,918	120,525	135,791	129,379	110,122
Sales	47,248	69,621	110,896	53,092	78,442	104,787	114,888	121,822	120,442	127,209	133,035	111,038
Value of sales	$3,673,122	$3,183,496	$3,945,140	$981,698	$1,688,410	$2,405,382	$2,777,100	$3,017,522	$2,999,223	$3,129,957	$3,298,657	$2,999,650
Average	$77.74	$45.73	$35.58	$18.49	$21.52	$22.95	$24.17	$24.77	$24.90	$24.60	$24.80	$27.01
Lake Dock:												
Production	7,619	14,942	31,650	17,753	22,173	26,603	26,383	27,810	25,755	25,408	25,132	23,052
Sales	6,568	13,377	28,099	18,528	23,329	24,733	26,936	28,979	26,344	24,987	24,757	22,104
Value of sales	$566,150	$697,343	$1,340,745	$377,884	$466,562	$554,999	$649,330	$684,097	$653,011	$607,836	$625,513	$836,887
Average	$86.20	$52.13	$47.72	$20.40	$20.00	$22.44	$24.11	$23.61	$24.79	$24.33	$25.27	$37.86
Southeastern:												
Production	30,146	87,126	105,233	60,798	87,879	99,074	99,310	110,319	104,958	118,021	113,404	96,668
Sales	30,337	91,771	103,201	59,383	87,027	103,253	99,857	107,907	106,808	115,069	115,001	96,570
Value of sales	$2,348,218	$4,687,404	$3,934,217	$1,206,533	$2,126,549	$2,752,766	$2,734,857	$2,893,510	$2,815,598	$3,051,128	$3,048,508	$2,740,981
Average	$77.40	$51.08	$38.12	$20.32	$24.44	$26.66	$27.39	$26.81	$26.36	$26.52	$26.51	$28.38
Western:												
Production	6,464	10,334	16,070	5,416	11,422	15,077	16,341	17,368	23,190	39,554	36,029	24,553
Sales	6,464	10,258	15,627	4,982	10,131	15,262	17,660	16,431	24,610	39,155	36,489	23,213
Value of sales	$547,095	$540,636	$537,775	$82,736	$259,847	$399,842	$501,448	$504,738	$781,390	$1,246,112	$1,150,900	$745,995
Average	$84.64	$52.70	$34.41	$16.61	$25.65	$26.20	$28.39	$30.72	$31.75	$31.83	$31.54	$32.14
Total:												
Production	272,152	446,564	744,157	392,722	580,274	718,231	745,198	766,804	761,270	818,244	764,293	643,752
Sales	278,746	465,665	716,733	388,558	576,951	726,504	756,569	751,914	774,815	776,962	801,062	642,236
Value of sales	$21,361,464	$22,522,248	$25,861,479	$7,501,160	$13,153,642	$19,876,168	$17,708,646	$19,460,205	$20,211,666	$19,828,483	$20,534,078	$18,024,763
Average	$76.63	$48.37	$36.08	$19.31	$22.80	$24.61	$26.05	$25.88	$26.09	$25.52	$25.63	$28.07

TABLE 27. - PRODUCTION, SALES, AND VALUE OF AMMONIA LIQUOR (NH_3 CONTENT) AT OVEN-COKE PLANTS, BY REGIONS, 1919, 1924, 1929, 1934, AND 1939-46, IN NET TONS 29077

	1919	1924	1929	1934	1939	1940	1941	1942	1943	1944	1945	1946
New England:												
Production	435	568	119	157	1,161	1,375	1,144	1,116	1,040	1,136	567	474
Sales	419	572	119	122	1,163	1,385	1,144	1,109	1,047	1,133	575	477
Value of sales	$69,851	$85,823	$10,492	$6,169	$43,056	$54,111	$57,069	$60,452	$54,770	$61,941	$22,639	$18,157
Average	$166.71	$150.04	$88.17	$50.57	$37.02	$39.07	$49.89	$54.51	$52.31	$54.67	$39.37	$38.06
Middle Atlantic:												
Production	4,441	3,525	3,907	5,274	4,704	5,364	4,531	4,723	4,816	4,478	4,240	3,903
Sales	4,418	3,630	3,926	5,219	4,685	5,394	4,540	4,674	4,638	4,307	4,133	3,761
Value of sales	$811,509	$708,038	$410,818	$323,838	$335,971	$391,187	$338,001	$364,706	$357,034	$278,845	$254,696	$234,945
Average	$183.68	$195.05	$104.64	$62.05	$71.71	$72.52	$74.45	$78.03	$76.98	$64.74	$61.62	$62.47
Ohio:												
Production	3,522	3,792	5,590	4,408	4,784	4,930	5,438	7,106	6,974	6,896	6,387	5,900
Sales	3,572	3,992	5,535	4,281	4,772	4,975	4,886	6,416	6,279	6,399	5,674	5,279
Value of sales	$730,250	$715,606	$544,028	$260,339	$323,083	$353,676	$346,819	$496,502	$478,681	$424,410	$350,912	$329,420
Average	$204.44	$179.26	$98.29	$60.81	$67.70	$71.09	$70.98	$77.38	$76.24	$66.32	$61.85	$62.40
Illinois-Indiana:												
Production	6,790	6,497	7,454	3,060	3,398	4,545	5,636	5,383	5,916	5,678	3,748	3,066
Sales	6,949	7,019	7,336	2,770	3,342	4,377	5,820	5,410	5,830	5,688	3,801	3,134
Value of sales	$1,511,383	$1,288,151	$729,426	$165,345	$218,858	$305,141	$409,403	$389,876	$410,282	$342,828	$210,952	$162,878
Average	$217.50	$183.52	$99.43	$59.69	$65.49	$69.71	$70.34	$72.07	$70.37	$60.27	$55.50	$51.97
Lake Dock:												
Production	5,886	7,566	7,516	7,354	7,084	7,812	9,040	9,574	9,225	8,939	8,531	7,811
Sales	6,325	6,049	7,390	7,106	7,097	7,594	8,217	8,279	8,329	7,931	7,489	6,963
Value of sales	$1,493,589	$1,309,332	$765,578	$397,081	$361,435	$379,873	$434,910	$462,012	$631,659	$500,934	$454,105	$420,924
Average	$236.14	$216.45	$103.60	$55.88	$50.93	$50.02	$52.93	$55.81	$75.84	$63.16	$60.64	$60.45
Southeastern:												
Production	4,016	2,274	3,169	1,544	3,001	4,443	5,600	6,025	6,135	4,538	4,134	3,837
Sales	3,961	2,279	3,169	1,369	2,958	4,400	5,564	6,050	6,204	4,546	4,048	3,907
Value of sales	$1,050,046	$507,024	$355,173	$77,577	$198,476	$314,121	$414,771	$464,819	$475,024	$305,827	$262,797	$250,972
Average	$265.10	$222.48	$112.08	$56.67	$67.10	$71.39	$74.55	$76.83	$76.57	$67.27	$64.92	$64.24
Western:												
Production	178	293	259	....	....	....	....	....	....	....	....	....
Sales	179	292	260	....	....	....	....	....	....	....	....	....
Value of sales	$26,322	$42,454	$5,287	....	....	....	....	....	....	....	....	....
Average	$147.05	$145.39	$20.33	....	....	....	....	....	....	....	....	....
Total:												
Production	25,268	24,515	28,014	21,797	24,132	28,469	31,389	33,927	34,106	31,665	27,607	24,991
Sales	25,823	23,833	27,735	20,867	24,017	28,125	30,171	31,938	32,327	30,004	25,720	23,521
Value of sales	$5,692,950	$4,656,428	$2,820,802	$1,230,349	$1,480,879	$1,798,109	$2,000,973	$2,238,367	$2,407,450	$1,914,785	$1,556,101	$1,417,296
Average	$220.46	$195.38	$101.71	$58.96	$61.66	$63.93	$66.32	$70.08	$74.47	$63.82	$60.50	$60.26

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UNITED STATES DEPARTMENT OF THE INTERIOR
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J. A. KRUG, Secretary   JAMES BOYD, Director

29878

FOR RELEASE DECEMBER 10, 1947   MINERAL MARKET REPORT No. MMS 1555

INDUSTRIAL EXPLOSIVES IN THE UNITED STATES - 1946

Consumption of industrial explosives in the United States during 1946 advanced to a total of 536,314,652 pounds which was 17 percent greater than in 1945, according to the Bureau of Mines, United States Department of the Interior. This gain in 1946 reversed the slow downtrend which started in 1943 and persisted through 1945. Consumption in 1946 was greater than in any other year since 1920 and was the third largest annual poundage on record.

The 17-percent gain over the 1945 consumption resulted from increased sales of permissible explosives and of high explosives other than permissibles which gained respectively 3 and 24 percent in 1946. The increased sales of permissibles was due in a large part to the sharp gain in use of this type of explosive in the anthracite mines of Pennsylvania. The gain in consumption of high explosives other than permissibles resulted from greatly increased demand for all uses except metal mining in which consumption decreased moderately. Consumption of black powder in 1946 declined slightly from 1945 owing to decreased use of pellet powder which was only partly compensated for by slightly increased consumption of granular black blasting powder.

The coal mining industry in 1946, as in 1945, was the largest consumer of each type of explosive. It alone consumed 45 percent of all industrial explosives used in the country in 1946. Bituminous-coal mines consumed 34 percent and anthracite mines 11 percent of the total 1946 sales of explosives. Of the 240,115,239 pounds used in 1946 to mine coal, 45 percent were high explosives other than permissible, 41 percent were permissibles, and 14 percent were black blasting powder.

It is noteable that for the first year since 1915, the poundage of high explosives used in coal mining was greater than the quantity of permissibles used to mine coal. This change was caused by the greater proportion of strip coal produced in 1946 than in 1945 and earlier years and by the heavier overburden which had to be moved by stripping. In 1939, high explosives other than permissibles were only 19 percent of the total explosives consumption by coal mines and this proportion has increased each year since. Permissible explosives represented 40 percent of the total coal-mine consumption in 1939 and after increasing each year to 49 percent in 1943, the proportion has declined to 41 percent in 1946. The proportion of black blasting powder has declined steadily from 41 percent of the total quantity used in coal mining in 1939 to 14 percent in 1946.

Prepared by V. E. Wrenn under the supervision of Forrest T. Moyer Chief, Accident Analysis Division, Economics and Statistics Branch.

Salient statistics of industrial explosives in the United States, 1935-39 average, 1945 and 1946.

Kind of explosive		1935-39 average	1945	1946
Apparent consumption of --				
Black blasting powder:				
Granular............	25-lb. kegs	1,250,831	492,133	541,544
	pounds	31,270,775	12,303,325	13,538,600
Pellet..............	25-lb. cases	1,363,237	985,768	931,398
	pounds	34,080,925	24,644,200	23,284,950
Total............	25-lb. units	2,614,068	1,477,901	1,472,942
	pounds	65,351,700	36,947,525	36,823,550
High explosives:				
Permissible..........	pounds	45,683,634	97,407,076	100,258,217
Other than permissible...........	pounds	253,624,298	322,956,349	399,232,885
Total.............	pounds	299,307,932	420,363,425	499,491,102
Grand total............	pounds	364,659,632	457,310,950	536,314,652

The demand for explosives by the metal mining industry continued to decline, and 8 percent less explosives were used in 1946 than in 1945. Virtually all explosives used in metal mines are of the high explosive other than permissible type. The greatest percentage declines in consumption were in States producing principally copper or iron ores - Utah, New York, Michigan, Washington, and Minnesota. The increased demand for "high explosives" was in greatest proportions in the States of South Dakota, California, and Nevada, which have large production of gold ores.

Quarries and nonmetal mines used 39 percent more explosives in 1946 than in 1945 owing to the strong demand for products of these operations in construction work and in the extensive road building programs. Over 96 percent of the explosives used in the quarries and nonmetal mines were high explosives other than permissibles.

Consumption of "high explosives other than permissibles" in railway and other construction work gained 55 percent in 1946. All States consumed more of this type of explosives except Florida, Mississippi, Indiana, Washington, and the Territory of Alaska. Among the larger consuming States, Colorado, Kentucky, Texas, Louisiana, and West Virginia, showed the highest proportional increase when compared with 1945. Black blasting powder and permissibles are not used extensively in railway and other construction work.

Four percent of all types of explosives manufactured and sold during 1946 was for use other than mining, quarrying, and railway and other construction work. The quantity of explosives used for "all other purposes" in 1946 increased 59 percent over 1945 to a total of 21,681,076 pounds. Nearly all States showed increased consumption for this purpose.

Industrial explosives sold for consumption in the United States, in 1945-46, by uses.

Kind of explosive	Coal mining		Metal mining	
	1945	1946	1945	1946
Apparent consumption of Black blasting powder:				
Granular..25-lb. kegs	429,341	391,448	813	949
pounds	10,733,525	9,786,200	20,325	23,725
Pellet....25-lb. cases	972,306	911,890	20	880
pounds	24,307,650	22,797,250	500	22,000
Total...25-lb. units	1,401,647	1,303,338	833	1,829
pounds	35,041,175	32,583,450	20,825	45,725
High explosives:				
Permissible....pounds	96,848,151	99,455,442	15,250	20,325
Other than permissible......pounds	91,550,813	108,076,347	89,292,270	82,173,012
Total........pounds	188,398,964	207,531,789	89,307,520	82,193,337
Grand total.......pounds	223,440,139	240,115,239	89,328,345	82,239,062

Kind of explosive	Quarrying and non-metal mining		Railway and other construction work		All other purposes	
	1945	1946	1945	1946	1945	1946
Apparent consumption of - Black blasting powder:						
Granular..25-lb. kegs	42,925	54,528	10,908	75,895	8,146	18,724
pounds	1,073,125	1,363,200	272,700	1,897,375	203,650	468,100
Pellet....25-lb. cases	12,613	16,410	246	1,322	583	896
pounds	315,325	410,250	6,150	33,050	14,575	22,400
Total...25-lb. units	55,538	70,938	11,154	77,217	8,729	19,620
pounds	1,388,450	1,773,450	278,850	1,930,425	218,225	490,500
High explosives:						
Permissible.... pounds	446,900	688,650	78,150	55,650	18,625	38,150
Other than permissible.pounds	73,031,032	101,457,708	55,641,405	86,373,392	13,440,829	21,152,426
Total...pounds	73,477,932	102,146,358	55,719,555	86,429,042	13,459,454	21,190,576
Grand total..pounds	74,866,382	103,919,808	55,998,405	88,359,467	13,677,679	21,681,076

Industrial explosives sold for consumption in the United States in 1946, by States of consumption

State	Black blasting powder			High explosives	
	Granular (25-lb.kegs)	Pellet (25-lb.cases)	Total (25-lb.units)	Other than permissible (Pounds)	Permissible (Pounds)
Alabama	6,472	39,056	45,528	10,782,264	5,659,200
Alaska	-	-	-	422,800	345,000
Arizona	223	30	253	15,562,900	6,650
Arkansas	13,367	4,792	18,159	3,163,550	58,850
California	69,638	-	69,638	12,294,743	2,900
Colorado	1,359	6,824	8,183	7,601,254	760,275
Connecticut	194	-	194	862,726	-
Delaware	2	-	2	147,485	-
Florida	25,829	-	25,829	2,010,792	800
Georgia	3,540	1,420	4,960	3,169,948	2,100
Idaho	45	-	45	4,502,310	-
Illinois	62,954	219,452	282,406	15,092,411	9,704,375
Indiana	14,115	65,043	79,158	15,524,595	2,133,650
Iowa	8,204	27,226	35,430	8,123,243	1/ 5,450
Kansas	2,523	3,768	6,291	8,850,419	86,400
Kentucky	143,363	166,044	309,407	14,068,230	8,817,337
Louisiana	4	4	8	4,993,450	69,800
Maine	177	-	177	868,675	-
Maryland & D.C.	1,810	5,604	7,414	1,765,135	301,950
Massachusetts ..	210	18	228	898,671	-
Michigan	35	352	387	13,124,061	20,350
Minnesota	1,500	12	1,512	13,178,669	-
Mississippi	104	-	104	3,715,767	100
Missouri	22,293	10,181	32,474	14,496,756	14,900
Montana	303	5,520	5,823	6,999,483	220,250
Nebraska	270	-	270	412,525	-
Nevada	146	-	146	5,960,131	-
New Hampshire ..	24	-	24	336,701	-
New Jersey	136	-	136	2,573,840	25
New Mexico	20	1,180	1,200	10,819,667	290,150
New York	886	174	1,060	11,535,278	700
North Carolina .	7,588	320	7,908	5,034,500	700
North Dakota ...	4,732	13,302	18,034	231,650	105,850
Ohio	23,529	51,347	74,876	17,561,233	2,105,675
Oklahoma	11,887	22,112	33,999	12,105,114	92,100
Oregon	769	-	769	7,216,180	23,200
Pennsylvania ...	36,826	199,463	236,289	69,020,221	35,030,802
Rhode Island ...	68	-	68	43,900	-
South Carolina .	271	-	271	1,099,252	23,750
South Dakota ...	201	-	201	1,670,425	3,050
Tennessee	22,771	60,968	83,739	6,485,645	759,100
Texas	1,854	-	1,854	16,207,774	367,850
Utah	1,183	-	1,183	5,306,166	2,010,700
Vermont	1,850	40	1,890	892,625	-
Virginia	34,445	15,838	50,283	7,327,521	3,595,200
Washington	1,018	-	1,018	8,864,242	439,650
West Virginia ..	9,655	9,698	19,353	17,502,836	25,969,678
Wisconsin	2,011	-	2,011	6,089,260	800
Wyoming	1,140	1,610	2,750	2,715,812	1,239,800
Total, 1946	541,544	931,398	1,472,942	399,232,885	100,258,217

1/ Sold by manufacturer but later returned unused to him.

Industrial explosives sold for consumption in 1946, by type, State of consumption and use

GRANULAR BLACK BLASTING POWDER (25-lb. kegs).

State of consumption	Use					
	Coal mining	Metal mining	Quarrying and non-metal mining	Railway and other construction work	All other purposes	Total
Alabama	2,278	-	3,282	878	34	6,472
Arizona	-	98	-	125	-	223
Arkansas	12,902	-	84	335	46	13,367
California	-	414	516	66,698	2,010	69,638
Colorado	764	50	409	130	6	1,359
Connecticut ...	-	-	18	2	174	194
Delaware	-	-	-	2	-	2
Florida	-	-	21,000	1	4,828	25,829
Georgia	296	-	2,363	873	9	3,540
Idaho		-	-	10	35	45
Illinois	62,224	-	661	2	67	62,954
Indiana	11,565	-	2,527	-	23	14,115
Iowa	7,581	-	470	4	149	8,204
Kansas	1,212	14	552	662	83	2,523
Kentucky	142,957	-	100	204	102	143,363
Louisiana	-	-	-	3	1	4
Maine	-	-	109	29	39	177
Maryland and D. C.	1,732	18	34	25	1	1,810
Massachusetts .	-	-	106	4	100	210
Michigan	-	-	-	-	35	35
Minnesota	-	-	1,103	17	380	1,500
Mississippi ...	-	-	100	4	-	104
Missouri	20,249	2	1,487	205	350	22,293
Montana	162	-	100	-	41	303
Nebraska	-	-	185	53	32	270
Nevada	-	120	-	-	26	146
New Hampshire .	-	-	-	13	11	24
New Jersey	-	-	15	1	120	136
New Mexico	-	-	20	-	-	20
New York	-	-	581	6	299	886
North Carolina.	-	-	2,622	1,505	3,461	7,588
North Dakota ..	4,728	-	-	-	4	4,732
Ohio	21,882	-	1,197	-	450	23,529
Oklahoma	11,049	-	375	462	1	11,887
Oregon	-	2	-	375	392	769
Pennsylvania;						
Anthracite ..	3,518	-	4,200	208	106	36,826
Bituminous ..	28,794					
Rhode Island ..	-	-	68	-	-	68
South Carolina.	-	-	238	20	13	271
South Dakota ..	200	-	-	-	1	201
Tennessee	17,644	100	3,175	1,833	19	22,771
Texas	1/ 20	-	1,029	339	506	1,854
Utah	-	131	1,052	-	-	1,183
Vermont	-	-	1,750	-	100	1,850
Virginia	30,128	-	554	401	3,362	34,445
Washington	409	-	80	216	313	1,018
West Virginia .	8,855	-	344	38	418	9,655
Wisconsin	-	-	1,222	212	577	2,011
Wyoming	340	-	800	-	-	1,140
Total	391,448	949	54,528	75,895	18,724	541,544

1/ Sold by manufacturer but later returned unused to him.

Industrial explosives sold for consumption in 1946, by type, State of consumption and use

PELLET BLACK BLASTING POWDER (25-lb. cases).

State of consumption	Use					
	Coal mining	Metal mining	Quarrying and non-metal mining	Railway and other construction work	All other purposes	Total
Alabama	38,550	80	-	418	8	39,056
Arizona	30	-	-	-	-	30
Arkansas	3,986	800	-	6	-	4,792
Colorado	6,824	-	-	-	-	6,824
Georgia	1,410	-	-	10	-	1,420
Illinois	219,128	-	160	80	84	219,452
Indiana	64,663	-	120	214	46	65,043
Iowa	25,852	-	1,020	-	364	27,226
Kansas	3,762	-	4	2	-	3,768
Kentucky	157,916	-	7,828	-	300	166,044
Louisiana	-	-	-	4	-	4
Maryland and D. C.	5,604	-	-	-	-	5,604
Massachusetts .	-	-	18	-	-	18
Michigan	352	-	-	-	-	352
Minnesota	-	-	12	-	-	12
Missouri	9,651	-	212	318	-	10,181
Montana	5,520	-	-	-	-	5,520
New Mexico	1,100	-	80	-	-	1,180
New York	-	-	174	-	-	174
North Carolina.	-	-	320	-	-	320
North Dakota ..	13,302	-	-	-	-	13,302
Ohio	46,287	-	5,060	-	-	51,347
Oklahoma	22,110	-	-	-	2	22,112
Pennsylvania:						
Anthracite ..	110,819	-	894	230	42	199,463
Bituminous ..	87,478					
Tennessee	60,928	-	24	12	4	60,968
Vermont	-	-	40	-	-	40
Virginia	15,626	-	204	8	-	15,838
West Virginia .	9,412	-	240	-	46	9,698
Wyoming	1,590	-	-	20	-	1,610
Total	911,890	880	16,410	1,322	896	931,398

Industrial explosives sold for consumption in 1946, by type, State of consumption and use

PERMISSIBLE EXPLOSIVES (POUNDS).

State of consumption	Use					
	Coal mining	Metal mining	Quarrying and non-metal mining	Railway and other construction work	All other purposes	Total
Alabama	5,640,250	-	1,100	7,600	10,250	5,659,200
Alaska	345,000	-	-	-	-	345,000
Arizona	11,000	650	-	1/5,000	-	6,650
Arkansas	58,850	-	-	-	-	58,850
California	1,750	1,150	-	-	-	2,900
Colorado	759,425	550	-	300	-	760,275
Florida	-	-	-	-	800	800
Georgia	100	-	-	2,000	-	2,100
Illinois	9,703,825	-	1/1,400	1,600	350	9,704,375
Indiana	2,132,100	-	1,500	50	-	2,133,650
Iowa	3,200	-	1/9,800	1,150	-	1/5,450
Kansas	13,050	-	73,350	-	-	86,400
Kentucky	8,811,737	-	5,400	150	50	8,817,337
Louisiana	-	-	69,650	150	-	69,800
Maryland and D. C.	284,800	-	14,550	2,600	-	301,950
Michigan	20,350	-	-	-	-	20,350
Mississippi	-	-	-	100	-	100
Missouri	14,400	500	-	-	-	14,900
Montana	220,250	-	-	-	-	220,250
New Jersey	-	-	-	-	25	25
New Mexico	290,150	-	-	-	-	290,150
New York	-	-	700	-	-	700
North Carolina.	500	-	-	200	-	700
North Dakota ..	105,850	-	-	-	-	105,850
Ohio	2,099,025	-	6,650	-	-	2,105,675
Oklahoma	92,100	-	-	-	-	92,100
Oregon	8,550	-	-	14,650	-	23,200
Pennsylvania:						
Anthracite ..	17,032,300	14,800	39,800	18,100	18,225	35,030,802
Bituminous ..	17,907,577					
South Carolina.	-	-	23,750	-	-	23,750
South Dakota ..	3,050	-	-	-	-	3,050
Tennessee	753,900	-	2,000	3,000	200	759,100
Texas	-	-	367,850	-	-	367,850
Utah	1,988,475	1,675	20,250	-	300	2,010,700
Virginia	3,582,550	-	5,200	4,350	3,100	3,595,200
Washington	434,300	1,000	4,000	-	350	439,650
West Virginia ..	25,902,028	-	59,300	3,850	4,500	25,969,678
Wisconsin	-	-	-	800	-	800
Wyoming	1,235,000	-	4,800	-	-	1,239,800
Total	99,455,442	20,325	688,650	55,650	38,150	100,258,217

1/ Sold by manufacturer but later returned unused to him.

Industrial explosives sold for consumption in 1946, by type, State of consumption and use.

HIGH EXPLOSIVES OTHER THAN PERMISSIBLES (POUNDS).

23878

State of consumption	Use					
	Coal mining	Metal mining	Quarrying and non-metal mining	Railway and other construction work	All other purposes	Total
Alabama	2,164,124	4,915,674	1,770,206	919,960	1,012,300	10,782,264
Alaska	20,000	221,000	-	156,300	25,500	422,800
Arizona	-	12,274,070	84,950	3,052,280	151,600	15,562,900
Arkansas	734,650	1,048,650	689,050	571,200	120,000	3,163,550
California	8,000	2,744,408	3,847,651	5,174,357	520,327	12,294,743
Colorado	176,850	3,752,261	548,380	3,025,140	98,623	7,601,254
Connecticut ...	-	-	230,476	464,320	167,930	862,726
Delaware	-	-	10,400	51,490	85,595	147,485
Florida	-	-	911,250	600,112	499,430	2,010,792
Georgia	35,500	31,800	1,475,027	884,950	742,671	3,169,948
Idaho	-	2,124,390	190,800	1,989,070	198,050	4,502,310
Illinois	5,457,533	126,450	8,428,500	716,767	363,161	15,092,411
Indiana	11,269,279	-	3,674,411	252,177	328,728	15,524,595
Iowa	334,500	4,000	5,013,593	1,338,825	1,432,325	8,123,243
Kansas	2,679,235	2,690,300	2,737,631	686,003	57,250	8,850,419
Kentucky	7,379,384	21,250	3,197,250	3,269,096	201,250	14,068,230
Louisiana	-	-	606,550	3,775,200	611,700	4,993,450
Maine	-	-	141,650	571,425	155,600	868,675
Maryland and D. C.	31,069	-	1,150,429	423,910	159,727	1,765,135
Massachusetts .	-	-	584,671	162,800	151,200	898,671
Michigan	2,305	6,999,475	5,304,507	199,109	618,665	13,124,061
Minnesota	-	11,138,569	439,646	584,875	1,015,579	13,178,669
Mississippi ...	-	-	67,550	2,875,917	772,300	3,715,767
Missouri	3,829,065	5,063,095	4,580,067	887,479	137,050	14,496,756
Montana	2,143,668	2,939,097	949,050	696,930	270,738	6,999,483
Nebraska	-	-	290,750	88,425	33,350	412,525
Nevada	-	5,224,420	412,500	287,721	35,490	5,960,131
New Hampshire .	-	-	32,301	153,550	150,850	336,701
New Jersey	-	1,478,801	601,012	441,253	52,774	2,573,840
New Mexico	300	3,592,482	3,639,968	3,580,432	6,485	10,819,667
New York	-	2,412,378	6,340,439	2,293,402	489,059	11,535,278
North Carolina.	10,350	75,750	2,250,575	1,440,000	1,257,825	5,034,500
North Dakota ..	142,800	-	-	27,175	61,675	231,650
Ohio	5,752,376	-	10,341,372	1,151,040	316,495	17,561,283
Oklahoma	1,219,775	3,284,350	1,883,891	5,688,753	28,345	12,105,114
Oregon	2,000	101,600	333,450	4,807,300	1,971,830	7,216,180
Pennsylvania:						
Anthracite ..	39,421,007	440,050	13,327,719	2,212,748	643,205	69,020,221
Bituminous ..	12,975,492					
Rhode Island ..	-	-	18,800	23,800	1,300	43,900
South Carolina.	-	-	711,402	176,775	211,075	1,099,252
South Dakota ..	900	1,150,600	336,275	158,025	24,625	1,670,425
Tennessee	455,436	1,165,725	2,470,534	2,202,700	191,250	6,485,645
Texas	11,800	15,100	2,589,208	13,556,816	34,850	16,207,774
Utah	9,900	4,340,385	350,805	537,466	67,610	5,306,166
Vermont	-	306,250	207,265	175,190	203,920	892,625
Virginia	914,805	251,600	3,134,891	2,622,293	403,932	7,327,521
Washington	190,200	1,131,632	388,905	4,387,359	2,766,146	8,864,242
West Virginia .	10,429,494	-	2,259,411	3,962,161	851,770	17,502,836
Wisconsin	-	838,550	2,648,660	1,166,100	1,435,950	6,089,260
Wyoming	274,550	268,850	253,880	1,903,216	15,316	2,715,812
Total ...	108,076,347	82,173,012	101,457,708	86,373,392	21,152,426	399,232,885

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary JAMES BOYD, Director

For release DECEMBER 29, 1947.

MINERAL MARKET REPORT
MMS No. 1556

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TIN IN 1946

In the fifth year of a world-wide tin shortage, 1946, total world output rose only 6 percent from the long-time low of the preceding year to 89,000 long tons according to the Bureau of Mines, Department of the Interior. World consumption of the order of 115,000 tons was made possible by drafts on stocks of the United States and the United Kingdom through the agency of the Combined Tin Committee. Slow progress in rehabilitation in the Far East accompanied by unsettled political conditions there and in Bolivia were the principal factors in retarded expansion of production. World requirements for tin probably will not be satisfied until 1949.

The year was notable, as well, for the widespread price confusion, complicated by differentials between internal and external prices; consummation of retroactively higher purchase agreements and government maintenance of subsidies on sales. In the United States the domestic selling price of 52 cents a pound for Grade A was effective until early November. Then with the revocation of price and wage controls it was advanced to 70 cents and so remained to the year end.

The International Tin Control scheme came to an end as of December 31. In October a meeting of representatives of the major producing and consuming countries was held in London. The participants recommended the formation of a Tin Study Group to function as a part of the International Trade Organization as proposed by the United States in 1945. An organizational meeting was called for April 1947 at Brussels.

There was no domestic mine production but smelters set a new record at 43,500 long tons of metal.

Industrial stocks of pig tin in the United States were the equivalent of about 3 months' supply at the end of 1946. Augmented by Government stockpiles of pig tin and ores the total inventory at the beginning of 1947 was about 16 months' supply. At the year end total stocks of primary tin and tin in ore were 71,734 long tons or 14 percent less than the end of 1945. The total excludes 9,817 tons of Japanese tin subject to international allocation by the Combined Tin Committee. Usable Government stocks were something over 7 months' supply at the 1946 use rate; but much was locked up in in-process materials, and new supply available for distribution became essentially equivalent to receipts of foreign metal plus output of domestic smelters.

Prepared by C. E. Nighman and J. B. Umhau under the supervision of Charles White Merrill, Chief, Metal Economics Division, Economics and Statistics Branch.

Stocks of tin held by the tin consuming industry at the end of 1944, 1945, and 1946, in long tons

Raw material	December 31, 1944			December 31, 1945			December 31,1946		
	Industries			Industries			Industries		
	Tin plate	Other	Total	Tin plate	Other	Total	Tin plate	Other	Total
Pig tin:			1/			2/			3/
Primary ..	8,442	8,895	17,337	6,315	7,787	14,102	7,286	7,246	14,53
Secondary	.....	49	49	...	358	358	...	439	439
Terne Metal 4/	129	..	129	160	...	160	169	...	169
Scrap 4/.	233	4,147	4,380	228	4,852	5,080	263	5,331	5,594
In process	3,213	2,283	5,496	3,669	2,420	6,089	3,662	2,704	6,366
Total	12,017	15,374	27,391	10,372	15,417	25,789	11,380	15,720	27,100

1/ Not including 1,941 tons in transit or in warehouses. 2/ Not including 1,600 tons in transit or in warehouses. 3/ Not including 1,000 tons in transit or in warehouses. 4/ Tin content.

Domestic tin consumers canvassed by the Bureau of Mines reported net receipts of 85,153 long tons of tin in 1946, or 1 percent less than in 1945. Two-thirds or 56,603 tons (54,663 in 1945) was primary pig tin, and the rest was in scrap, secondary pig tin and terne metal. About 85 percent (72 percent in 1945) of the primary tin consisted of Longhorn brands.

Receipts of tin by tin-consuming industries in 1945 and 1946 in long tons

Raw material purchased	1945			1946		
	Industries			Industries		
	Tin plate and Terne plate	Other	Total	Tin plate and Terne plate	Other	Total
Pig Tin:						
Primary	26,031	28,632	54,663	28,466	28,137	56,603
Secondary	–	2,623	2,623	–	2,236	2,236
Terne Metal 1/	312	–	312	257	–	257
Scrap 1/	–	28,498	28,498	–	26,057	26,057
Total	26,343	59,753	86,096	28,723	56,430	85,153

1/ Tin content

Despite some liberalization in permitted uses tin consumption decreased 3 percent from 83,583 long tons in 1945 to 80,943 in 1946 largely because of strikes in consuming or related industries. The use of primary tin decreased 2 percent while secondary tin decreased 6 percent. Consumption of primary tin increased in 1946 as follows: solder, 23 percent, collapsible tubes 36 percent, chemicals & miscellaneous 30 percent, and pipe & tubing 34 percent. That used for type metal increased from 10 tons in 1945 to 123 in 1946, after the July 5 amendment to M-43 permitted primary tin to be used for this purpose. Decreases occurred in the following as indicated: tin plate and terne plate 1 percent, babbitt less than 1 percent, bronze & brass 34 percent, tinning 20 percent, foil 4 percent and bar tin 7 percent.

Consumption of primary and secondary tin in the United States, 1942-46, in long tons

	1942	1943	1944	1945	1946
Stocks on hand Jan. 1 1/	67,421	43,853	34,735	27,391	25,789
Net receipts during year:					
Primary	33,126	40,548	55,323	54,663	56,603
Secondary	5,096	4,462	2,536	2,623	2,236
Terne	405	188	228	312	257
Scrap	26,941	29,903	28,883	28,498	26,057
Total receipts	65,568	75,101	86,970	86,096	85,153
Available supply	132,989	118,954	121,705	113,487	110,942
Stocks on hand Dec. 31 1/	43,853	34,735	27,391	25,789	27,100
Total processed during year	89,136	84,219	94,314	87,698	83,842
Intercompany transactions in scrap	2,547	2,889	3,205	3,239	2,091
Total consumed in manufacturing .	86,589	81,330	91,109	84,459	81,751
Plant losses	902	1,000	1,140	876	808
Tin content of manufactured products	85,687	80,330	89,969	83,583	80,943
Primary	58,288	46,253	59,156	55,642	54,627
Secondary	29,399	34,077	30,813	27,941	26,316

1/ Stocks shown exclude tin in transit or in other warehouses on January 1, as follows: 1942, 2,700 tons; 1943, 78 tons; 1944, 316 tons; 1945, 1,941 tons; 1946, 1,600 tons, and 1947, 1,000 tons.

Consumption of tin in the United States, 1944-46, by finished products (tin content), in long tons

Product	1944			1945			1946		
	Primary	Secondary	Total	Primary	Secondary	Total	Primary	Secondary	Total
Tin plate	24,968	---	24,968	26,080	---	26,080	26,127	----	26,127
Terneplate	510	230	740	493	248	741	208	238	446
Solder	8,786	4,841	13,627	10,930	3,399	14,329	13,443	3,673	17,116
Babbitt	5,790	2,996	8,786	4,144	3,684	7,828	4,125	2,874	6,999
Bronze & brass	13,768	19,327	33,095	9,093	17,972	27,065	5,963	16,594	22,557
Collapsible tubes	283	242	525	515	44	559	701	88	789
Tinning	2,771	370	3,141	2,390	202	2,592	1,903	205	2,108
Foil	226	92	318	181	64	245	174	46	220
Chemicals	34	259	293	1/ 196	1/ 448	1/ 644	1/ 255	1/ 346	1/ 601
Pipe & Tubing	230	32	262	204	89	293	273	64	337
Type metal	49	1,302	1,351	10	1,281	1,291	123	1,865	1,988
Bar tin	1,092	167	1,259	963	131	1,094	891	78	969
Miscellaneous alloys ...	417	707	1,124	378	228	606	373	168	541
White Metal	19	86	105	65	151	216	68	77	145
Miscellaneous	213	162	375	(2)	(2)	(2)	(2)	(2)	(2)
Total	59,156	30,813	89,969	55,642	27,941	83,583	54,627	26,316	80,943

1/ Includes "Miscellaneous".
2/ Included under "Chemicals".

Tin plate and ternplate accounted for 48 percent of the primary tin consumed in the United States in 1946, and in respect to total tin used (primary and secondary) recovered first place (with 33 percent) the rank held prior to 1943. The major saving during five years of restrictions resulted from the development and use of electrolytic tin plate. The saving is estimated to have exceeded 60,000 tons in the five years, 1941-45. In 1946 the trend toward electrolytic plate was not accentuated but comprised nearly one-third the total tin-plate production as in 1945. However, the output of electrolytic plate rose 3 percent, whereas that of hot-dipped was less than 1 percent higher in 1945. In 1946 the average tin weight per short ton of tin plate was 11.9 pounds for electrolytic, with 27.1 pounds for hot-dipped plate. Corresponding averages for 1945 were 11.9 and 27.2 pounds. Ternplate production decreased 42 percent with an almost (40 percent) corresponding decrease in the use of tin for this purpose.

Tin content of tin plate, waste-waste, strips, cobbles, etc., produced in the United States, 1945 and 1946.

Product	Quantity manufactured short tons		Tin content			
			Total long tons		Pounds per short ton of tin plate	
	1945	1946	1945	1946	1945	1946
Tin plate						
Cokes standard	1,709,412	1,716,591	20,762	20,770	27.2	27.1
Electrolytic	859,636	882,537	4,598	4,702	11.9	11.9
Total tin plate	2,569,048	2,599,128	25,360	25,472	22.1	22.0
Waste-waste, strips, cobbles (etc.	87,287	76,782	720	655	18.4	19.1
Grand Total	2,656,335	2,675,910	26,080	26,127	21.9	21.9

The ratio of primary pig tin to total terne metal used was much smaller in 1946. Only secondary tin was permitted to make terne metal during the first quarter; thereafter, either pig tin or secondary tin was permitted. Because of steel shortages output of terneplate was subordinated in order to channel tin plate into containers for perishable and seasonal goods. To conserve tin and lead, 0.25 pound electrolytic tin plate was permitted as optional to the use of terneplate in an amendment to M-43 in July.

Tin content of terneplate produced in the United States, 1945 and 1946.

	Quantity manufactured short tons		Tin content (long tons)						Pounds of tin per short ton of terneplate	
			Total		Purchased as					
					Pig tin		Terne Metal			
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
Short ternes	193,586	69,861	447	178	311	87	136	91	5.1	5.7
Long ternes	170,442	142,917	281	262	175	118	106	144	3.6	4.1
Waste-waste	7,419	2,976	13	6	7	3	6	3	3.9	4.7
Total	371,447	215,754	741	446	493	208	248	238	4.4	4.6

World mine production of tin was only 89,000 tons in 1946, or about 55 percent of the pre-war annual average, none was reported in the United States. Mining operations in the main tin fields of the world in British Malaya, Siam, and Netherlands Indies, after four years' Japanese wanton exploitation have been recovering slowly. During 1946 these sources produced at only one-sixth their pre-war rate; and in Bolivia, Belgian Congo and Nigeria, the Allies Nations' mainstays during the war, production was 12 percent below 1945. Consequently, with potential and actual demands very great, throughout 1946 a world tin shortage persisted, and was ameliorated only by drafts on stocks and on accumulations of ore and tin resulting from war-time Japanese operations. Production has been expanding in the Far East in 1947, but estimates indicate world requirements may not be met until 1949. Therefore, Government control over tin consumption (M-43 and M-81) has been retained until March 1, 1948, but is being eased as rapidly as additional supplies become available.

World mine production of tin (content of ore)
1942-46 by countries, in long tons

Country	1942	1943	1944	1945	1946
Belgian Congo	15,754	17,007	16,858	17,070	14,095
Bolivia (exports)	38,293	40,312	38,720	42,487	37,717
British Malaya	15,748	26,000	9,309	3,152	8,432
Indochina, French	1,029	653	358	1/ 100	2/
Netherlands Indies ...	9,812	17,457	6,719	843	6,535
Nigeria	12,574	12,835	12,512	11,224	10,333
Siam	7,843	5,839	3,194	1,275	1/ 500
Total	101,053	120,103	87,670	76,200	78,000
Australia	2,931	2,635	2,547	2,282	2,127
China	1/ 7,000	1/7,500	1/3,000	1/1,500	1/2,500
Japan	1,894	1,107	374	2/	2/
United Kingdom	1,363	1,359	1,289	1/ 993	1/ 793
Other	7,300	9,200	6,800	4,500	5,500
Total	20,500	21,800	14,000	9,300	11,000
Grand total	122,000	142,000	102,000	86,000	89,000

1/ Estimates by authors
2/ Not available

Smelter output of 43,500 long tons of pig tin in 1946 set a new domestic record. In the highest month it was near an annual rate of 47,000 tons but declined to about a 38,000-ton level owing to the dearth of raw material and its low grade. The quantity of concentrates (tin content) imported for treatment by the smelter (mostly from Bolivia) was the highest recorded and was almost 14 percent more than in 1945. The Combined Tin Committee allocated 16,280 tons of metallic tin to the United States in 1946, part of which was not purchased until mid-1947. Metallic tin recorded as imported for consumption in 1946 was 15,520 long tons- 83 percent higher than in 1945 and greatest in the past four years. However, most of it was Japanese tin sent here for grading and analysis and subject to international allocation by CTC. In 1946, secondary tin recovered was 24,700 long tons, a drop of over 21 percent compared with 1945. Detinning plants accounted for about 11 percent (mostly as pig tin).

World smelter production of tin, 1942-46, by countries,
in long tons

Country	1942	1943	1944	1945	1946
Australia	3,024	2,565	2,442	2,359	1/ 2,000
Belgian Congo	13,963	11,068	1/ 10,000	6,713	2,372
British Malaya	1/10,000	1/ 15,000	1/ 5,000	1/ 2,500	1/ 7,500
China	7,756	7,091	1,982	1/ 1,000	1,929
Japan	3,870	2,058	759	121	68
Netherlands Indies ...	1/ 8,000	1/ 12,000	1/ 3,000	1/ 500	1/ 500
Portugal	2,381	3,058	373	182	114
Union of South Africa	535	862	1,150	1,033	858
United Kingdom	1/30,000	1/ 31,026	1/ 25,000	1/ 28,000	1/ 28,500
United States	16,168	21,489	30,884	40,475	43,500
Other	7,300	10,700	8,400	3,100	4,700
Total (estimated).	103,000	117,000	89,000	86,000	92,000

1/ Estimates by authors

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

J. A. KRUG, Secretary
JAMES BOYD, Director

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MINERAL MARKET REPORT
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BITUMINOUS COAL AND LIGNITE IN 1946

Prepared by W. H. Young, R. L. Anderson,
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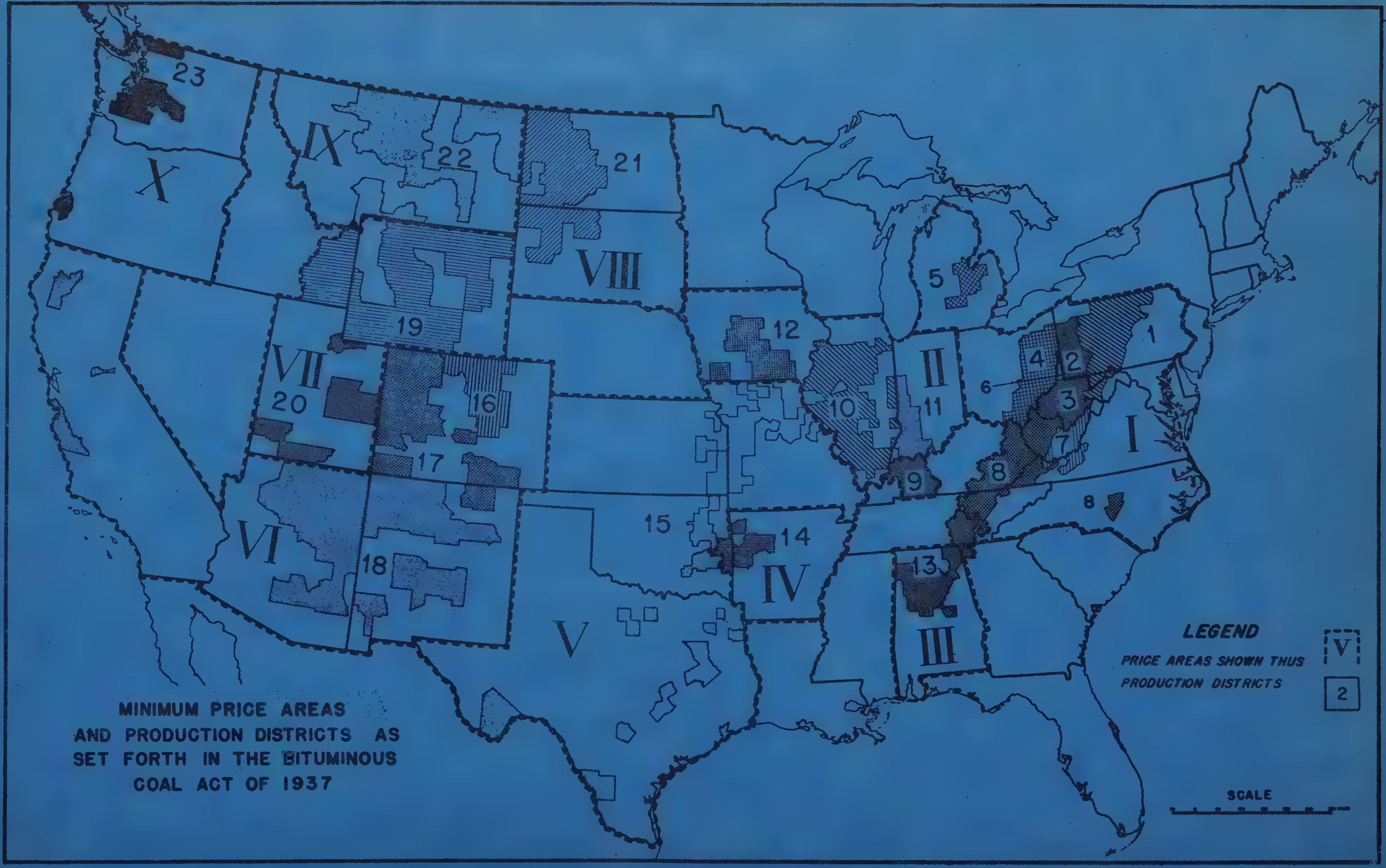
Division, Economics and Statistics Branch.



MINIMUM PRICE AREAS
AND PRODUCTION DISTRICTS AS
SET FORTH IN THE BITUMINOUS
COAL ACT OF 1937

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BITUMINOUS COAL AND LIGNITE

SUMMARY OUTLINE

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SURVEY OF THE BITUMINOUS-COAL AND LIGNITE INDUSTRY IN 1946

The purpose of this interim report is to make available, as soon as possible after the completion of the annual canvass, the final figures on the bituminous-coal industry for the calendar year 1946. The Minerals Yearbook, 1947, will, as in the past, carry preliminary data for 1947 and final figures for 1946.

Production. - The production of soft coal in 1946 - an output of 533,922,068 net tons [1] - declined 7.6 percent from the 577,617,327 tons produced in 1945. This decline was not due to lower demand but to strikes. The soft-coal industry suffered two major strikes in 1946 and intermittent wildcat strikes throughout the entire year. The estimated loss of production during the two major strikes alone amounted to 107,000,000 tons at the going rates of production. According to the Bureau of Labor Statistics, there were 485 strikes in soft-coal mines in 1946, with 834,000 workers involved and 19,500,000 man-days lost (an average of 23 days per man). Although the war was over, the shortage of coal continued and Government controls were retained. There was practically no seasonal decline in production in 1946, due to the shortage of coal. Throughout most of the year production was over 12,000,000 tons per week, except when output was reduced because of strikes or holidays.

Consumption. - All major classes of consumers except cement mills used less coal in 1946 than in 1945. The total consumption in 1946 was approximately 59,000,000 tons less than in 1945. Table 6 shows trends in consumption for the major classes of consumers.

Changes in stocks.- The reserve supply of bituminous coal and lignite in the hands of industrial consumers and retail coal yards increased from 45,665,000 tons at the beginning of 1946 to 47,157,000 tons at the close. The days' supply of stocks increased from 27 to 32. Stocks on the upper Lake docks increased 530,587 tons from January 1 to December 31, 1946.

Mechanization. - The quantity of coal loaded mechanically at underground mines in the United States continued to advance during 1946. Mechanical loading increased from 56 percent of the total underground output in 1945 to 58 percent in 1946. Sales of underground loading equipment, in terms of capacity, were 20 percent greater in 1946 than in 1945.

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[1] Throughout this report "tons" refers to net tons of 2,000 pounds unless otherwise indicated.

Mechanical cleaning. - The total capacity of mechanical-cleaning equipment sold for use at bituminous-coal mines in 1946 was estimated at 18,000 tons of cleaned coal per hour, an increase of 78 percent over the previous year.

Trend of employment. - The average men working at bituminous-coal and lignite mines in 1946 increased to 396,434 men from 383,100 men employed in 1945.

Index to capacity. - The potential output upon a 308-day basis (6-day week, full-time capacity) was 768,000,000 tons in 1946. Since it is not possible for all mines to operate 308 days per year, the more conservative figure of 280 days was suggested some years ago by the coal committee of the American Institute of Mining and Metallurgical Engineers (see Minerals Yearbook, 1935, pp. 631-632). The average output per day worked in 1946 was 2,494,963 tons, which (if applied to 280 days) gives an annual potential output of 699,000,000 tons compared with the actual total production of 533,922,068 tons. For purposes of historical comparison, a capacity of 261 days, based on the 5-day week, is also shown in figure 4 and table 12.

Trend of fuel efficiency. - For many years before 1942 there was a steady trend toward increased fuel efficiency. During the period 1942-46 the various components of this trend were arrested or reversed. All industries shown in table 7 exhibited decreased fuel efficiency in 1946 compared to 1945 except electric public-utility power plants, which reported no change.

Competition with oil and gas. - Soon after the close of the war, increased competition between the fuels developed, with numerous reports of conversion from coal to fuel oil.

Electric power utilities consumed 4 percent less bituminous coal, 79 percent more fuel oil, and 6 percent less gas in 1946 than in 1945.

Class I railroads decreased their consumption of coal 12 percent in 1946, and their purchases of fuel oil decreased from 1945 purchases by the same proportion.

The manufacture of domestic coal-burning equipment is reflected in statistics published by the Bureau of the Census. Factory sales of domestic stokers for burning bituminous coal increased from 89,522 in 1945 to 164,304 in 1946. Shipments of domestic oil burners, boiler-burner units, and furnace-burner units increased from 139,611 in 1945 to 499,009 in 1946.

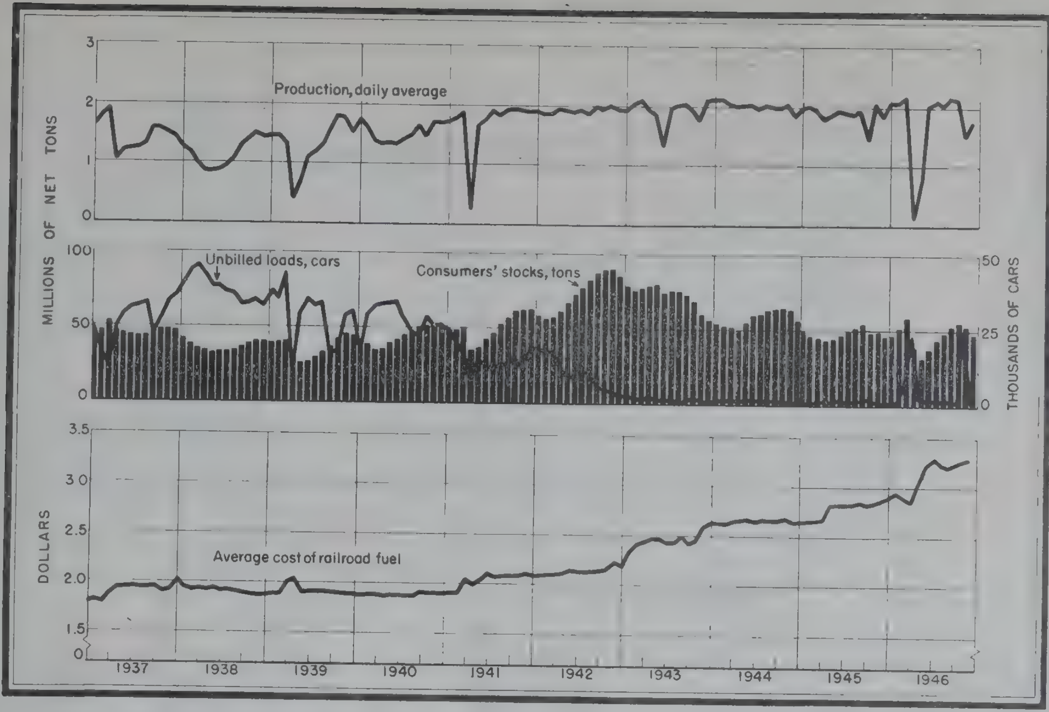

Figure 1. - Trends of production, stocks, and prices of bituminous coal and lignite in the United States, 1937-46.

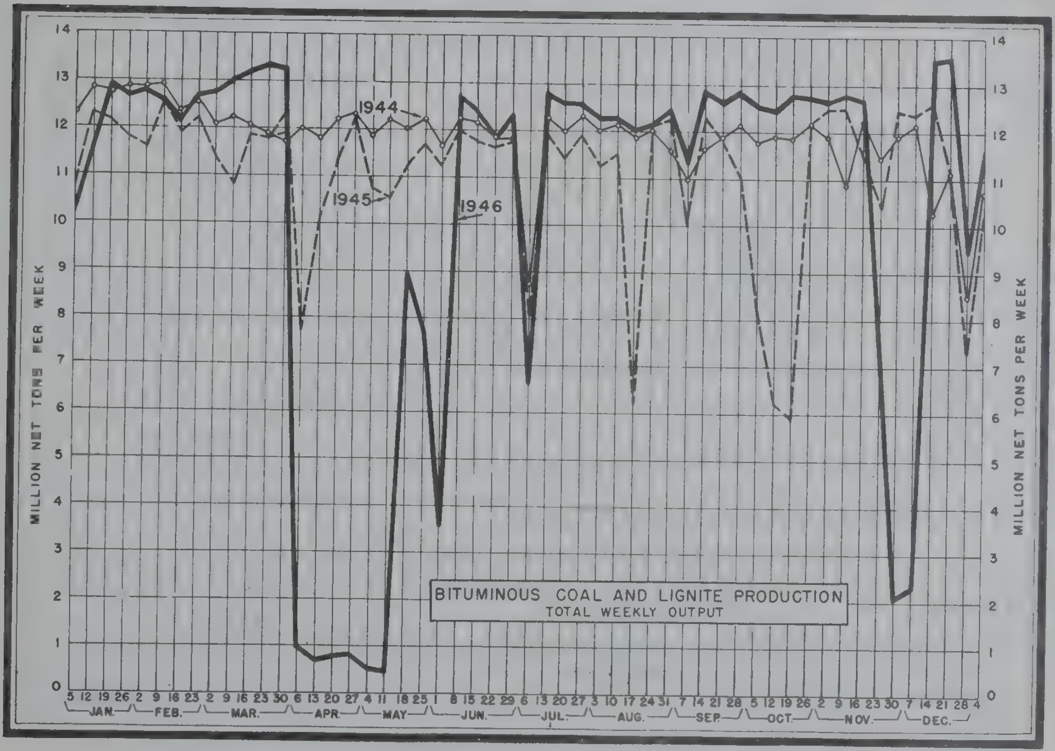

Figure 2. - Production of bituminous coal and lignite in the United States, by weeks, 1944-46.

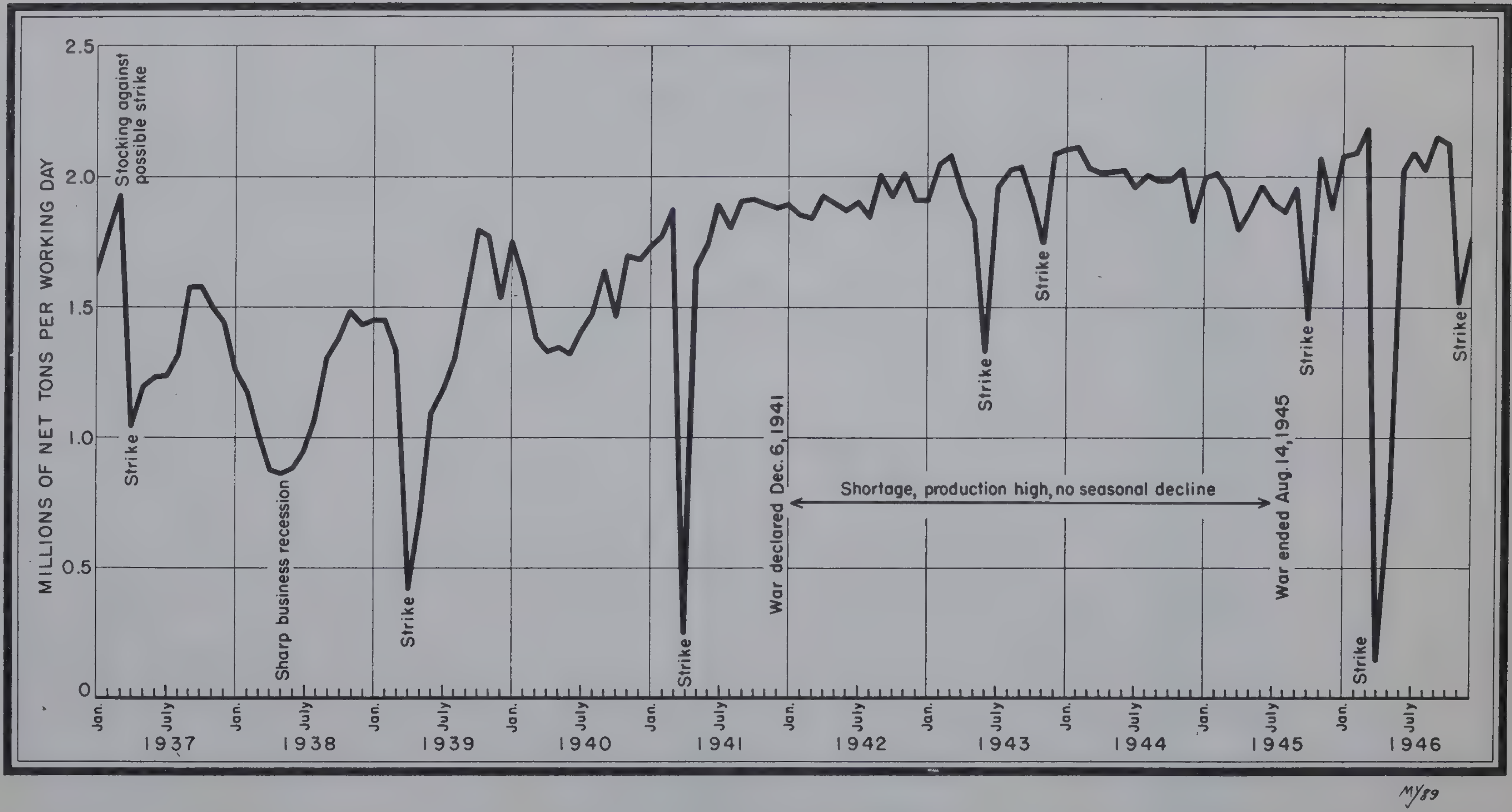

Figure 3. - Average production of bituminous coal and lignite in the United States per working day in each month, 1937-46.

SOURCES OF DATA

Data for 1946 are final and are based upon detailed annual reports of production and mine operation furnished by the producers. As in previous years, all but a small percentage of the output was covered by the reports submitted. For the remaining output not directly reported - consisting chiefly of small mines - it has been possible to obtain reasonably accurate data from the records of the State mine departments, which have statutory authority to require such reports or, in a few instances, from railroad carloadings.

In accordance with the practice followed by the Bureau of Mines in previous years, the statistics in this report relate to mines having an output of 1,000 tons a year or more and do not attempt to include many small mines producing less than 1,000 tons a year that sell their output by wagon or truck.

These data include, for convenience and historical comparison, the small output of anthracite and semianthracite produced outside Pennsylvania and the production of lignite.

SALIENT STATISTICS

TABLE 1. - SALIENT STATISTICS OF THE BITUMINOUS-COAL AND LIGNITE INDUSTRY IN THE UNITED STATES, 1945-46

(All tonnage figures represent net tons)

	1945	1946	Change in 1946
			Percent
Production	577,617,327	533,922,068	- 7.6
Consumption in the United States [1]	559,567,000	500,386,000	- 10.6
Stocks at end of year:			
Industrial consumers and retail yards	45,665,000	47,157,000	+ 3.3
Stocks on upper Lake docks	5,049,242	5,579,829	+ 10.5
Unbilled loads, at mines or in classification yards [2]	37,050	46,200	+ 24.7
			Cents
Price indicators (average per net ton):			
Average cost of railroad fuel purchased, f.o.b. mines [3]	$2.78	$3.11	+ 33
Average cost of coking coal at merchant byproduct ovens [4]	$5.90	$6.48	+ 58
Average retail price - 35 cities [5]	$10.49	$10.95	+ 46
Average railroad freight charge per net ton [6]	$2.20	$2.27	+ 7
			Percent
Underground loading machinery sold: [7]			
Mobile loading machines (number)	349	490	+ 40.4
Scrapers (number)	6	3	- 50.0
Conveyors, including those with duckbills (units)	738	838	+ 13.6
"Mother" conveyors (units)	137	183	+ 33.6
Surface stripping	109,986,865	112,963,717	+ 2.7
Mechanically loaded underground	262,512,729	245,340,768	- 6.5
Mechanically cleaned	147,885,936	138,669,837	- 6.2
Average number of men employed at mines operating	383,100	396,434	+ 3.5
Fuel efficiency indicators:			
Pounds of coal per kw.-hr. at electric plants [8]	1.30	1.29	- .8
Pounds per 1,000 gross ton-miles - railroads [9]	116	116	---

[1] Represents certain classes of consumers only.

[2] Association of American Railroads.

[3] Interstate Commerce Commission (class I steam railways, including class I switching and terminal companies.) Excludes freight charges.

[4] As reported by coke operators.

[5] Bureau of Labor Statistics.

[6] Average receipts per net ton of revenue bituminous coal and lignite originated, as reported by the Interstate Commerce Commission.

[7] Young, W. H., and Anderson, R. L., Sales of Mechanical Loading and Cleaning Equipment: Coal Age, February 1947, pp. 89-91, and Mining Congress Journal, February 1947, pp. 44-46.

[8] Federal Power Commission.

[9] Interstate Commerce Commission; includes coal equivalent of fuel oil consumed.

PRODUCTION BY WEEKS AND MONTHS

TABLE 2. - BITUMINOUS-COAL AND LIGNITE PRODUCTION (FINAL FIGURES) IN THE UNITED STATES IN 1946, WITH ESTIMATES BY WEEKS

Week ended-	Production (net tons)	Number of working days	Average production per working day (net tons)	Week ended-	Production (net tons)	Number of working days	Average production per working day (net tons)
Jan. 5	1/ 8,574,000	1/4.1	2/ 2,018,000	July 6	6,692,000	5	1,338,000
Jan. 12	11,707,000	6	1,951,000	July 13	12,918,000	6	2,153,000
Jan. 19	12,970,000	6	2,162,000	July 20	12,636,000	6	2,106,000
Jan. 26	12,675,000	6	2,113,000	July 27	12,654,000	6	2,109,000
Feb. 2	12,783,000	6	2,131,000	Aug. 3	12,362,000	6	2,060,000
Feb. 9	12,642,000	6	2,107,000	Aug. 10	12,360,000	6	2,060,000
Feb. 16	12,196,000	6	2,033,000	Aug. 17	12,053,000	6	2,009,000
Feb. 23	12,700,000	6	2,117,000	Aug. 24	12,207,000	6	2,035,000
Mar. 2	12,774,000	6	2,129,000	Aug. 31	12,567,000	6	2,095,000
Mar. 9	13,093,000	6	2,182,000	Sept. 7	11,388,000	5.1	2,233,000
Mar. 16	13,260,000	6	2,210,000	Sept. 14	12,936,000	6	2,156,000
Mar. 23	13,353,000	6	2,226,000	Sept. 21	12,676,000	6	2,113,000
Mar. 30	13,336,000	6	2,223,000	Sept. 28	12,929,000	6	2,155,000
Apr. 6	935,000	5	187,000	Oct. 5	12,587,000	6	2,098,000
Apr. 13	726,000	6	121,000	Oct. 12	12,558,000	6	2,093,000
Apr. 20	786,000	6	131,000	Oct. 19	12,834,000	6	2,139,000
Apr. 27	837,000	6	140,000	Oct. 26	12,796,000	6	2,133,000
May 4	551,000	6	92,000	Nov. 2	12,699,000	6	2,117,000
May 11	470,000	6	78,000	Nov. 9	12,770,000	6	2,128,000
May 18	9,015,000	6	1,503,000	Nov. 16	12,675,000	5.7	2,224,000
May 25	7,702,000	6	1,284,000	Nov. 23	6,539,000	6	1,090,000
June 1	3,607,000	5	721,000	Nov. 30	2,045,000	5	409,000
June 8	12,795,000	6	2,133,000	Dec. 7	2,303,000	6	384,000
June 15	12,402,000	6	2,067,000	Dec. 14	13,662,000	6	2,277,000
June 22	11,910,000	6	1,985,000	Dec. 21	13,667,000	6	2,278,000
June 29	12,365,000	6	2,061,000	Dec. 28	9,543,000	5	1,909,000
				Jan. 4 '47	1/4,702,000	1/ 2	2/ 2,255,000
					533,922,000	305.9	1,745,000

1/ Figures represent output and number of working days in that part of week included in the calendar year shown. Total production for the week ended January 5, 1946, was 10,291,000 net tons; week ended January 4, 1947, 11,502,000 net tons.

2/ Average daily production for entire week and not for working days in calendar year shown.

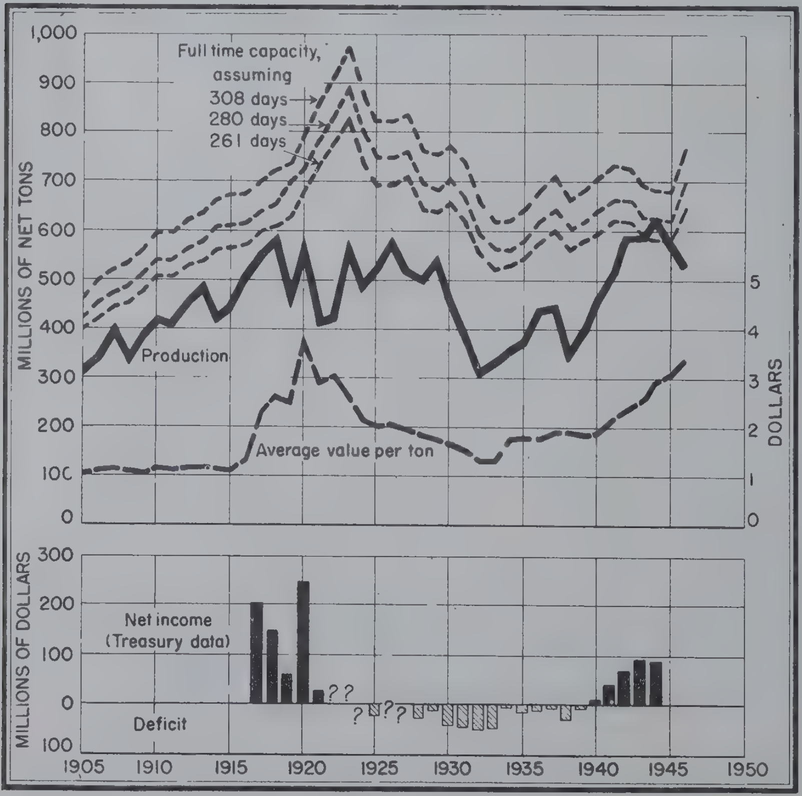

Figure 4. - Trends of bituminous-coal and lignite production, realization, mine capacity, and net income or deficit in the United States, 1905-46.

TABLE 3. - COAL PRODUCTION IN THE UNITED STATES, IN 1946, BY STATES (FINAL FIGURES), WITH ESTIMATES BY MONTHS, IN THOUSANDS OF NET TONS

(Totals for year are based on final complete returns from all operators known to have produced more than 1,000 tons a year. Apportionment of known yearly total among the twelve months is based upon best information available; in some States upon direct tonnage reports by operators to State mine departments; in most cases upon current records of railway carloadings and waterway shipments.)

State	January	February	March	April	May	June	July	August	September	October	November	December	Total
Alabama	1,518	1,402	1,918	133	593	1,697	1,695	1,700	1,566	1,726	1,050	1,185	16,183
Alaska	28	27	27	28	25	23	26	30	38	44	38	33	367
Arkansas	180	154	165	49	51	114	143	160	150	180	133	152	1,631
Colorado	782	662	690	20	243	382	352	450	560	695	465	613	5,914
Georgia	10	7	10	3	3	13	10	12	13	13	10	10	114
Illinois	6,807	6,278	6,970	1,225	2,580	5,893	5,570	6,228	5,935	6,758	4,068	5,157	63,469
Indiana	2,367	2,102	2,377	117	878	1,994	2,088	1,874	2,152	2,508	1,417	1,823	21,697
Iowa	201	186	179	65	106	150	135	153	146	154	147	166	1,788
Kansas	252	240	272	78	138	192	221	238	240	240	180	202	2,493
Kentucky:													
Eastern	4,744	4,750	5,280	200	1,760	4,758	4,990	5,464	4,935	5,506	3,197	3,758	49,342
Western	1,831	1,675	1,882	84	586	1,552	1,700	1,645	1,626	1,724	1,363	1,543	17,211
Total Kentucky	6,575	6,425	7,162	284	2,346	6,310	6,690	7,109	6,561	7,230	4,560	5,301	66,553
Maryland	205	184	235	8	114	211	216	202	155	182	134	157	2,003
Michigan	8	8	11	2	4	10	10	9	7	5	3	3	80
Missouri	378	359	406	117	208	286	330	358	360	360	270	301	3,733
Montana:													
Bituminous	399	353	330	161	223	284	270	267	332	391	305	368	3,683
Lignite	5	4	4	2	2	3	2	3	4	4	3	4	40
Total Montana	404	357	334	163	225	287	272	270	336	395	308	372	3,723
New Mexico	136	110	136	6	65	123	113	123	120	135	93	120	1,280
North Dakota (lignite)	300	228	170	108	123	130	127	137	223	335	332	342	2,555
Ohio	3,295	2,892	3,380	266	1,280	3,177	3,108	3,123	2,933	3,694	2,386	2,780	32,314
Oklahoma	285	245	264	119	122	185	232	257	213	262	213	250	2,647
Pennsylvania (bituminous) ...	12,678	11,669	13,556	232	2,477	12,029	12,836	13,573	12,677	14,235	9,178	10,357	125,497
South Dakota (lignite)	2	2	1	1	1	1	1	1	1	2	2	2	17
Tennessee	592	560	657	26	102	582	579	599	531	595	357	438	5,618
Texas (lignite)	7	5	6	3	4	4	4	4	4	4	5	6	56
Utah	630	590	639	14	248	473	548	567	590	628	442	625	5,994
Virginia	1,571	1,511	1,678	30	672	1,624	1,513	1,686	1,469	1,649	982	1,142	15,527
Washington	121	110	118	6	22	94	86	91	85	106	75	77	991
West Virginia	14,309	13,295	14,836	415	6,818	14,335	14,044	15,226	14,358	14,649	10,122	11,613	144,020
Wyoming	958	813	837	24	354	435	598	720	730	883	636	647	7,635
Other States 1/..............	3	3	3	1	1	1	1	1	1	2	3	3	23
Total bituminous coal and lignite	54,602	50,424	57,037	3,543	19,803	50,755	51,548	54,901	52,154	57,669	37,609	43,877	533,922
Pennsylvania anthracite 2/...	4,968	4,774	5,476	5,069	5,453	3,625	5,248	5,428	5,033	5,393	4,975	5,065	60,507
Grand total	59,570	55,198	62,513	8,612	25,256	54,380	56,796	60,329	57,187	63,062	42,584	48,942	594,429

1/ Includes Arizona and Oregon
2/ Includes Sullivan County.

TABLE 4. - BITUMINOUS COAL AND LIGNITE PRODUCTION IN THE UNITED STATES, IN 1946, BY DISTRICTS (FINAL FIGURES), WITH ESTIMATES BY MONTHS, IN THOUSANDS OF NET TONS

(Districts as defined in the Bituminous Coal Act of 1937, and modifications thereto. Exclusive of mines producing less than 1,000 tons a year)

(Totals for year are based on final complete returns from all operators known to have produced more than 1,000 tons during the year. Apportionment of known yearly total among the twelve months is based upon best information available; in some States upon direct tonnage reports from operators to State mine departments; in most cases upon current records of railroad carloadings and waterway shipments)

Minimum Price Area and Producing District	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
PRICE AREA 1													
Dist. 1. Eastern Pennsylvania 1/	5,495	5,114	5,839	158	1,212	5,242	5,703	5,758	5,491	5,988	3,955	4,490	54,445
Dist. 2. Western Pennsylvania	7,533	6,884	8,120	88	1,454	7,174	7,554	8,228	7,537	8,580	5,458	6,165	74,775
Dist. 3. Northern West Virginia	4,226	3,797	4,230	195	2,389	3,674	3,873	3,885	4,178	3,828	3,175	3,298	40,748
Dist. 4. Ohio	3,295	2,892	3,380	266	1,280	3,177	3,108	3,123	2,933	3,694	2,386	2,780	32,314
Dist. 5. Michigan	8	8	11	2	4	10	10	9	7	5	3	3	80
Dist. 6. Panhandle	443	427	434	32	202	440	443	434	392	440	320	353	4,360
Dist. 7. Southern Numbered 1	5,190	4,875	5,393	90	2,313	5,486	5,083	5,733	5,128	5,547	3,575	4,119	52,532
Dist. 8. Southern Numbered 2	11,112	10,789	12,099	334	4,339	11,441	11,442	12,621	11,331	12,352	7,424	8,972	114,256
Total Price Area 1	37,302	34,786	39,506	1,165	13,193	36,644	37,216	39,791	36,997	40,434	26,296	30,180	373,510
PRICE AREA 2													
Dist. 9. West Kentucky	1,831	1,675	1,882	84	586	1,552	1,700	1,645	1,626	1,724	1,363	1,543	17,211
Dist. 10. Illinois	6,807	6,278	6,970	1,225	2,580	5,893	5,570	6,228	5,935	6,758	4,068	5,157	63,469
Dist. 11. Indiana	2,367	2,102	2,377	117	878	1,994	2,088	1,874	2,152	2,508	1,417	1,823	21,697
Dist. 12. Iowa	201	186	179	65	106	150	135	153	146	154	147	166	1,788
Total Price Area 2	11,206	10,241	11,408	1,491	4,150	9,589	9,493	9,900	9,859	11,144	6,995	8,689	104,165
PRICE AREA 3													
Dist. 13. Southeastern	1,628	1,492	2,055	150	630	1,792	1,785	1,803	1,647	1,820	1,123	1,263	17,188
PRICE AREA 4													
Dist. 14. Arkansas-Oklahoma	206	176	189	60	62	131	163	183	169	204	152	175	1,870
PRICE AREA 5													
Dist. 15. Southwestern:													
Bituminous coal	889	822	918	303	457	646	763	830	794	838	644	730	8,634
Lignite (Texas)	7	5	6	3	4	4	4	4	4	4	5	6	56
Total Price Area 5	896	827	924	306	461	650	767	834	798	842	649	736	8,690
PRICE AREA 6													
Dist. 16. Northern Colorado	296	250	232	5	72	57	54	110	168	243	170	220	1,877
Dist. 17. Southern Colorado 2/	577	490	563	15	227	430	395	447	492	558	367	486	5,047
Dist. 18. New Mexico 3/	46	33	32	6	9	18	16	16	20	30	22	28	276
Total Price Area 6	919	773	827	26	308	505	465	573	680	831	559	734	7,200
PRICE AREA 7													
Dist. 19. Wyoming 4/	958	813	837	24	354	435	598	720	730	883	636	647	7,635
Dist. 20. Utah	630	590	639	14	248	473	548	567	590	628	442	625	5,994
Total Price Area 7	1,588	1,403	1,476	38	602	908	1,146	1,287	1,320	1,511	1,078	1,272	13,629
PRICE AREA 8													
Dist. 21. North-South Dakota (lig.)	302	230	171	109	124	131	128	138	224	337	334	344	2,572
PRICE AREA 9													
Dist. 22. Montana (bituminous and lignite)	404	357	334	163	225	287	272	270	336	395	308	372	3,723
PRICE AREA 10													
Dist. 23. Washington 5/	123	112	120	7	23	95	87	92	86	107	77	79	1,008
Alaska	28	27	27	28	25	23	26	30	38	44	38	33	367
Total Price Area 10	151	139	147	35	48	118	113	122	124	151	115	112	1,375
Grand Total 6/	54,602	50,424	57,037	3,543	19,803	50,755	51,548	54,901	52,154	57,669	37,609	43,877	533,922

1/Includes Maryland, and Grant, Mineral, and Tucker Counties, West Virginia.
2/Includes Colfax County, New Mexico.
3/Includes Arizona and California, but excludes Colfax County, New Mexico. No production was reported for California.
4/Includes Idaho. No production was reported for Idaho.
5/Includes Oregon.
6/For purposes of historical comparison and statistical convenience, figures include output of lignite and of anthracite and semianthracite outside of Pennsylvania.

AVERAGE VALUE

TABLE 5. - AVERAGE VALUE PER TON, F.O.B. MINES, OF BITUMINOUS COAL AND LIGNITE IN THE UNITED STATES, BY STATES, 1945-1946 1/

State	1945	1946		
		Strip Mines	Underground Mines	Total all mines
Alabama	$4.19	$4.85	$4.81	$4.81
Alaska	6.28	4.67	6.96	6.42
Arizona	3.50	-	3.79	3.79
Arkansas	5.05	4.56	6.48	5.82
Colorado	3.69	3.78	4.05	4.04
Georgia	3.85	4.70	4.70	4.70
Illinois	2.34	2.47	2.65	2.61
Indiana	2.32	2.55	2.69	2.61
Iowa	3.51	3.20	3.85	3.68
Kansas	2.57	2.66	4.13	2.78
Kentucky	3.00	2.54	3.52	3.41
Maryland	3.61	3.66	4.32	4.14
Michigan	5.47	-	6.45	6.45
Missouri	2.59	2.64	4.12	2.79
Montana (bituminous and lignite)	1.89	1.00	3.23	1.76
New Mexico	3.80	-	4.14	4.14
North and South Dakota (lignite)	1.56	1.60	2.11	1.69
Ohio	2.79	2.63	3.28	2.99
Oklahoma	3.61	3.27	4.57	3.75
Oregon	3.99	-	4.40	4.40
Pennsylvania	3.29	3.25	3.80	3.66
Tennessee	3.43	3.95	3.83	3.84
Texas (lignite)	.85	.83	-	.83
Utah	3.41	-	3.58	3.58
Virginia	3.43	3.47	3.85	3.84
Washington	5.12	5.09	5.51	5.47
West Virginia	3.20	3.28	3.70	3.65
Wyoming	2.83	2.29	3.11	3.00
Total	3.06	2.87	3.59	3.44

1/ Average gross realization, selling cost not deducted.

TABLE 6. - CONSUMPTION OF BITUMINOUS COAL AND LIGNITE, BY CONSUMER CLASS, WITH RETAIL DELIVERIES IN THE UNITED STATES, 1937-46, IN THOUSANDS OF NET TONS

Year	Colliery fuel	Electric power utilities 1/	Bunker, foreign trade 2/	Railroads (Class I) 3/	Coke		Steel and rolling mills	Coal-gas retorts	Cement mills 4/	Other industrials 5/	Retail dealer deliveries 5/	Total of classes shown
					Beehive ovens	Byproduct ovens						
1937	3,052	42,871	1,832	88,080	4,927	69,575	12,853	1,680	5,247	122,410	80,076	432,603
1938	2,493	38,245	1,352	73,921	1,360	45,266	8,412	1,644	4,483	92,390	68,520	338,086
1939	2,565	43,979	1,477	79,072	2,298	61,216	9,808	1,614	5,274	98,900	71,570	377,773
1940	2,443	50,973	1,426	85,130	4,803	76,583	10,040	1,746	5,633	106,280	87,700	432,757
1941	2,489	61,861	1,643	97,384	10,529	82,609	10,902	1,659	6,832	120,720	97,460	494,088
1942	2,708	65,636	1,585	115,410	12,876	87,974	10,434	1,721	7,570	131,550	104,750	542,214
1943	2,702	76,403	1,647	130,283	12,441	90,019	11,238	1,605	5,851	141,211	122,764	596,164
1944	2,712	78,887	1,559	132,049	10,858	94,438	10,734	1,545	3,789	130,353	124,906	591,830
1945	2,442	71,603	1,785	125,120	8,135	87,214	10,084	(6)	4,215	127,164	121,805	559,567
1946	1,951	68,743	1,381	110,166	7,167	76,121	8,603	(6)	7,009	118,659	100,586	500,386

1/ Federal Power Commission. Represents bituminous coal and lignite consumed by public utility power plants in power generation, including a small quantity of coke amounting to approximately 100,000 tons annually.

2/ U. S. Bureau of Census.

3/ Association of American Railroads. Represents consumption of bituminous coal and lignite by class I railways for all uses, including locomotive, powerhouse, shop, and station fuel. The Interstate Commerce Commission reports that in 1946 consumption for all uses by class I line-haul railways, plus purchases for class II and class III railways, plus purchases by all switching and terminal companies combined was 113,000,421 tons of bituminous coal and lignite.

4/ Includes a small amount of anthracite.

5/ Estimates based upon reports collected by the Solid Fuels Administration for War from a selected list of representative manufacturing plants and retail dealers.

6/ Included in "Other industrials."

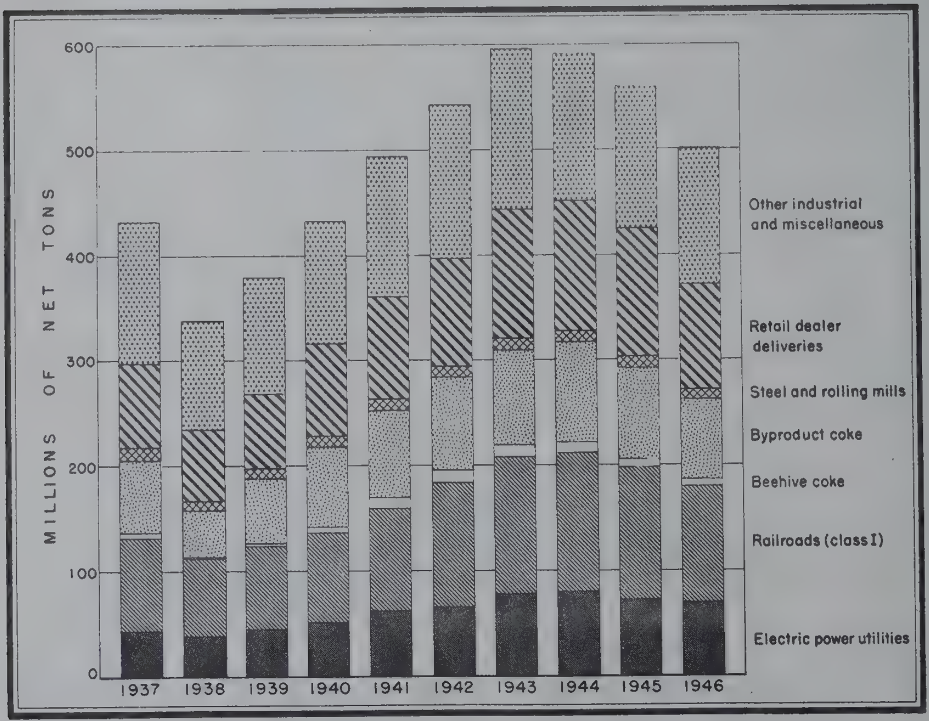

Figure 5. - Consumption of bituminous coal and lignite, by consumer class, with retail deliveries in the United States, 1937-46.

TABLE 7. - INDICATORS OF EFFECT OF FUEL ECONOMY ON CONSUMPTION OF COAL IN THE UNITED STATES PER UNIT OF PERFORMANCE SINCE THE WORLD WAR I

	Pounds	Reduction from base period (percent)
Steam railroads:		
Pounds per 1,000 gross ton-miles freight service:		
Average:		
1919-20	170	---
1945	116	31.8
1946	116	31.8
Pounds per passenger-train car-mile:		
Average:		
1919-20	18.5	---
1945	14.9	19.5
1946	15.2	17.8
Electric public-utility power plants:		
Pounds per kilowatt-hour:		
1919	3.2	---
1945	1.3	59.4
1946	1.3	59.4
Iron and Steel Plants:		
Pounds coking coal per net ton of pig: 1/		
1918	3,194	---
1945	2,656	16.8
1946	2,706	15.3
Coke manufacture: Savings of heat values through recovery of gas, tar, light oils, and breeze by extension of byproduct in place of beehive coking, 1913-14, expressed as percent of coal used for all coke in 1946 2/	---	18.1

1/ Includes only savings through higher yields of merchantable coke per ton of coal charged and lower consumption of coke per ton of iron and ferro-alloys. Excludes economies through recovery of byproducts, which are covered in next item.

2/ These byproducts are used in part for boiler fuel, in part for metallurgical purposes, in part for domestic heating and cooking, and to a small extent for automotive fuel.

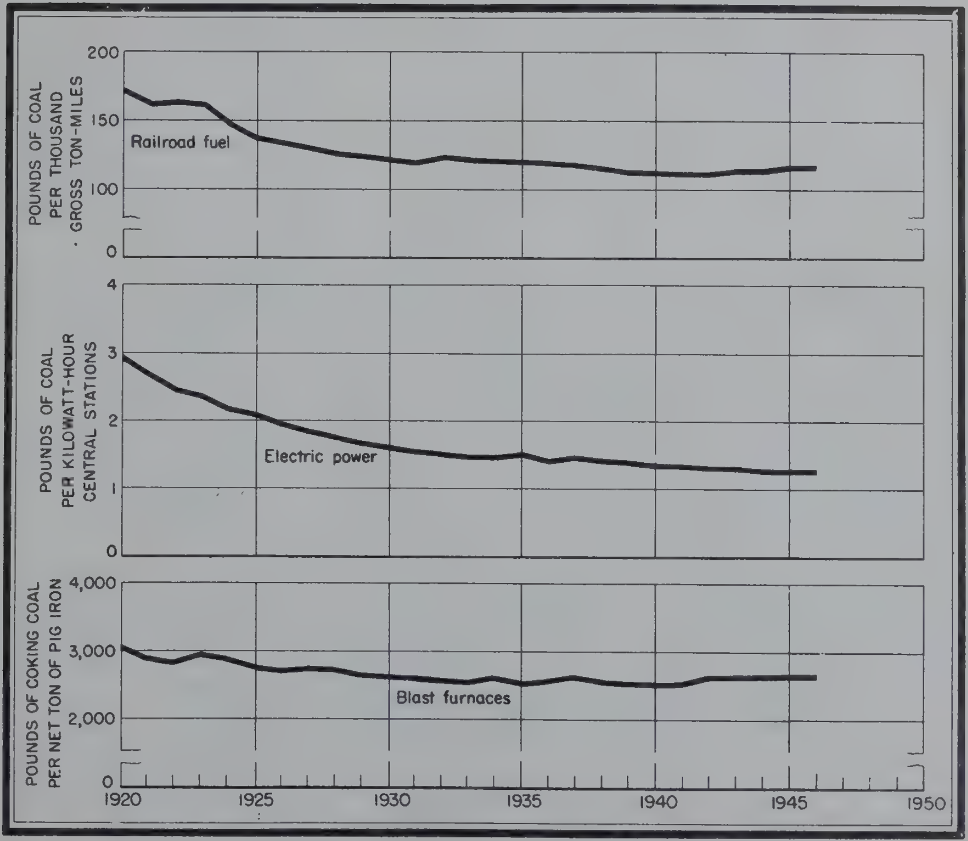

Figure 6. - Trends in fuel efficiency in the United States, 1920-46.

RELATIVE RATE OF GROWTH OF COAL, OIL, AND WATER POWER, 1889-1946

The total supply of available energy in the form of coal, oil, natural gas, and water power in 1946 was 35,353 trillion B.t.u. - a 1.9 percent decrease from 1945 (see fig. 7).

The figures are expressed in British thermal units because some common denominator is necessary for such unlike quantities as tons of coal, barrels of oil, and cubic feet of gas. Table 8 summarizes the equivalent of each of the fuels in trillions of British thermal units. Water power is represented by the equivalent fuel required to perform the same work. The table covers the years since 1937. Details for 1889 and 1899 to 1936 are given in Minerals Yearbook, 1937, page 807, and Minerals Yearbook, 1938, page 703.

In converting water power to its fuel equivalent, two alternative assumptions have been made. The first, as in previous issues of these tables, assumes a constant fuel equivalent of 4.02 pounds of coal for each kilowatt-hour of water power produced throughout the entire period from 1889 to 1946. This factor was selected because it represents, in round numbers, the average efficiency of all central stations generating steam-electric power in 1913, the base period used. The usefulness of the constant factor lies in showing the rate at which water power is being developed. It permits direct comparison between the relative increase (in kilowatt-hours of water power) and the corresponding increase or decrease (in tons of coal, barrels of oil, or cubic feet of gas produced). On the other hand, the constant factor makes no allowance for the fact that coal and other fuels produced today are used more efficiently than formerly.

To show the influence of improving fuel efficiency, a second computation of the energy equivalent of water power has therefore been made. This assumes a prevailing fuel equivalent, diminishing year by year, which represents the average performance of all fuel-burning central electric stations for the year in question. This average has declined from about 7.05 pounds of coal per kilowatt-hour in 1899 to 1.29 pounds in 1946. (The prevailing factor is thus much above the constant factor in 1899 and much below it in 1946.) The prevailing fuel equivalent indicates more nearly the quantity of fuel that would have been needed in any one year to generate the same power in a steam-electric station. It should be noted, however, that the ultimate uses to which the water power generated is put often displace fuel burned much less efficiently than in central stations and that in any instance no other important branch of fuel consumption has made advances in fuel efficiency approaching that of the central stations.

As these tables attempt to determine the total energy from all fuels and from water power, the ideal factor for converting water power into fuel equivalent would be the average efficiency of all forms of fuel consumption in each year. No basis for determining such an all-embracing average exists at present, but enough is known to make certain that it would show much less reduction from 1899 to 1946 than do the central stations. For the present, a just comparison of the changing contributions of water power and of fuel to the national energy supply would lie somewhere between the results shown by the constant equivalent and the prevailing central-station equivalent in these tables.

As in earlier issues of these tables, the figures for oil and natural gas represent the entire production of crude petroleum and of gas. Most of this production does not come into direct competition with coal. Much of the supply of both oil and gas is used in regions of the country, such as California and portions of the Southwest, where coal is available only at unusually high cost because of heavy transport charges. Nearly half of the natural gas is used in the field for drilling or operating oil and gas wells and pipe lines or for the manufacture of carbon black. More than half the oil is used in the form of gasoline, kerosine, and lubricants, for which purposes coal cannot well compete, except at very much higher levels of oil prices. Even these refined products, however, involve a certain measure of indirect competition with coal, for the energy market of the country is becoming more fluid and competitive, and a demand that cannot be met by one source of supply tends to fall back on the others.

The subject of interfuel competition is exceedingly complex, and an elaborate analysis and the accumulation of data not now available would be required to determine even approximately how much of any one fuel actually has been displaced either by other fuels or by water power. The present tables do not permit determination of such displacement; their purpose is rather to measure the long-time trends in the total demand for energy.

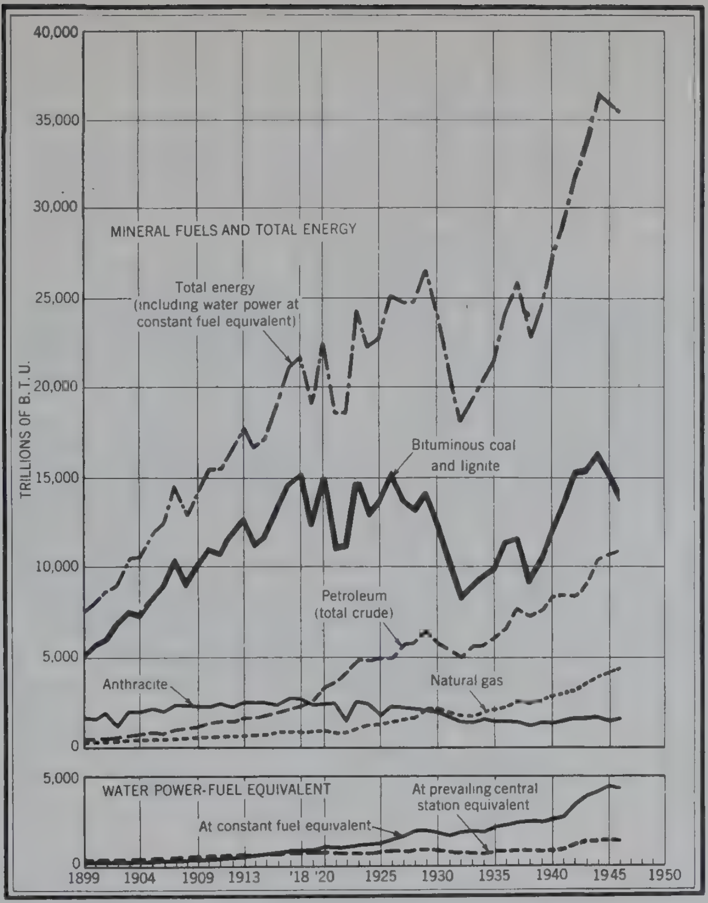

Figure 7. - Annual supply of energy from mineral fuels and water power in the United States, 1899-1946.

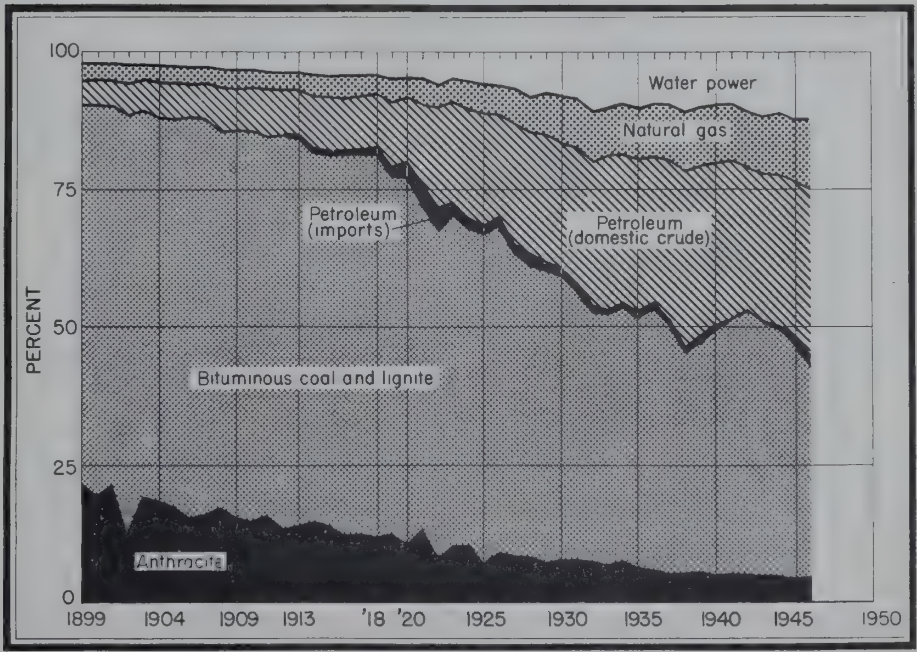

Figure 8. - Percentage of total B.t.u. equivalent contributed by the several sources of energy in the United States, counting water power at constant fuel equivalent, 1899-1946. If water power is counted at the prevailing fuel equivalent of central stations in each year, its proportion is 3.2 percent in 1899 and 4.3 percent in 1946, and the proportions of the other sources of energy are affected accordingly.

TABLE 8. - ANNUAL SUPPLY OF ENERGY FROM MINERAL FUELS AND WATER POWER IN THE UNITED STATES, 1937-46 1/, IN TRILLIONS OF B.T.U. 2/

Year	Pennsylvania anthracite	Bituminous coal and lignite	Total coal	Petroleum (total crude, including that refined)		Natural gas (total production)	Total petroleum and natural gas	Total mineral fuels	Water power (fuel equivalent)		Grand total energy	
				Domestic production	Imports				At constant fuel equivalent 3/	At prevailing central station equivalent 4/	Water power at constant fuel equivalent	Water power at prevailing central station equivalent
1937	1,410	11,673	13,083	7,675	165	2,588	10,428	23,511	2,446	871	25,957	24,382
1938	1,255	9,132	10,387	7,286	158	2,468	9,912	20,299	2,466	866	22,765	21,165
1939	1,400	10,345	11,745	7,590	199	2,663	10,452	22,197	2,423	838	24,620	23,035
1940	1,400	12,072	13,472	8,119	256	2,860	11,235	24,707	2,620	880	27,327	25,587
1941	1,533	13,471	15,004	8,413	304	3,024	11,741	26,745	2,804	934	29,549	27,679
1942	1,641	15,267	16,908	8,320	74	3,282	11,676	28,584	3,485	1,136	32,069	29,720
1943	1,650	15,463	17,113	9,034	83	3,671	12,788	29,901	3,999	1,304	33,900	31,205
1944 5/	1,733	16,233	17,966	10,067	269	3,989	14,325	32,291	4,160	1,344	36,451	33,635
1945	1,494	15,134	16,628	10,282	444	4,213	14,939	31,567	4,463	1,442	36,030	33,009
1946 6/	1,646	13,989	15,635	10,401	535	4,402	15,338	30,973	4,380	1,406	35,353	32,379

1/ Comparable data for earlier years in Minerals Yearbook, 1937, p. 807 and Minerals Yearbook, 1938, p. 703.

2/ The unit heat values employed are: Anthracite, 13,600 B.t.u. per pound; bituminous coal and lignite, 13,100 B.t.u. per pound; petroleum, 6,000,000 B.t.u. per barrel; natural gas, 1,075 B.t.u. per cubic foot. Water power includes installations owned by manufacturing plants and mines, as well as Government and privately-owned public utilities. The fuel equivalent of water power is calculated from the kilowatt-hours of power produced wherever available, as is true of all public-utility plants since 1919. Otherwise, the fuel equivalent is calculated from the reported horsepower of installed water wheels, assuming a capacity factor of 20 percent for manufacturers and mines and of 40 percent for public utilities.

3/ Assuming 4.02 pounds per kilowatt-hour, which is the average of central electric station practice in 1913, the base period used.

4/ Assuming the average central-station practice for each of the years for which data are available, which declined from about 7.05 pounds per kilowatt-hour in 1899 to 1.29 pounds in 1946.

5/ Revised.

6/ Subject to revision.

TABLE 9. - INDEX NUMBERS FOR RELATIVE RATE OF GROWTH OF COAL, OIL, AND WATER POWER IN THE UNITED STATES, 1937-46 1/

(The figures are expressed as percentage of the 1918 rate)

Year	Pennsylvania anthracite	Bituminous coal and lignite	Total coal	Petroleum (total crude)		Natural gas (total production)	Total petroleum and natural gas	Total mineral fuels	Water power (at constant fuel equivalent)	Grand total	
				Domestic production	Imports					With water power at constant fuel equivalent	With water power at prevailing central station equivalent
1937	52	77	73	359	73	334	332	112	292	119	112
1938	47	60	58	341	70	318	316	97	295	104	98
1939	52	68	66	355	88	344	333	106	289	113	106
1940	52	80	75	380	113	369	358	118	313	125	118
1941	57	89	84	394	135	390	374	127	335	135	128
1942	61	101	95	390	33	423	372	136	416	147	137
1943	61	102	96	423	37	474	408	142	478	155	144
1944 .2/.	64	107	101	471	119	515	457	154	497	167	155
1945	56	100	93	481	196	544	476	150	533	165	152
1946 3/.	61	92	88	487	237	568	489	147	523	162	149

1/ Comparable data for earlier years in Minerals Yearbook, 1937, p. 809 and Minerals Yearbook, 1938, p. 704.

2/ Revised.

3/ Subject to revision.

TABLE 10. - PERCENTAGE OF TOTAL B.T.U. EQUIVALENT CONTRIBUTED BY THE SEVERAL MINERAL FUELS AND WATER POWER IN THE UNITED STATES, 1937-46 1/

Year	Pennsylvania anthracite	Bituminous coal and lignite	Total coal	Petroleum (total crude)		Natural gas (total production)	Total petroleum and natural gas	Total mineral fuels	Water power, fuel equivalent	Grand total, including water power
				Domestic production	Imports					
	Water power counted at constant fuel equivalent of approximately 4 lb. per kilowatt-hour									
1937	5.4	45.0	50.4	29.6	0.6	10.0	40.2	90.6	9.4	100.0
1938	5.5	40.1	45.6	32.0	.7	10.8	43.5	89.1	10.9	100.0
1939	5.7	42.0	47.7	30.8	.8	10.8	42.4	90.1	9.9	100.0
1940	5.1	44.2	49.3	29.7	.9	10.5	41.1	90.4	9.6	100.0
1941	5.2	45.6	50.8	28.5	1.0	10.2	39.7	90.5	9.5	100.0
1942	5.1	47.6	52.7	26.0	.2	10.2	36.4	89.1	10.9	100.0
1943	4.9	45.6	50.5	26.7	.2	10.8	37.7	88.2	11.8	100.0
1944 2/	4.8	44.5	49.3	27.6	.7	11.0	39.3	88.6	11.4	100.0
1945	4.1	42.0	46.1	28.6	1.2	11.7	41.5	87.6	12.4	100.0
1946 3/	4.6	39.6	44.2	29.4	1.5	12.5	43.4	87.6	12.4	100.0
	Water power counted at prevailing central-station equivalent for year									
1937	5.8	47.8	53.6	31.5	.7	10.6	42.8	96.4	3.6	100.0
1938	5.9	43.2	49.1	34.4	.7	11.7	46.8	95.9	4.1	100.0
1939	6.1	44.9	51.0	32.9	.9	11.6	45.4	96.4	3.6	100.0
1940	5.5	47.2	52.7	31.7	1.0	11.2	43.9	96.6	3.4	100.0
1941	5.5	48.7	54.2	30.4	1.1	10.9	42.4	96.6	3.4	100.0
1942	5.5	51.4	56.9	28.0	.2	11.1	39.3	96.2	3.8	100.0
1943	5.3	49.5	54.8	28.9	.3	11.8	41.0	95.8	4.2	100.0
1944 2/	5.1	48.3	53.4	29.9	.8	11.9	42.6	96.0	4.0	100.0
1945	4.5	45.9	50.4	31.1	1.3	12.8	45.2	95.6	4.4	100.0
1946 3/	5.1	43.2	48.3	32.1	1.7	13.6	47.4	95.7	4.3	100.0

1/ Comparable data for earlier years in Minerals Yearbook, 1937, p. 810 and Minerals Yearbook, 1938, p. 704.
2/ Revised.
3/ Subject to revision. Percentages based upon figures in table 8.

STOCKS HELD BY CONSUMERS

TABLE 11. - STOCKS OF BITUMINOUS COAL AND LIGNITE IN HANDS OF COMMERICAL CONSUMERS AND IN RETAIL DEALERS' YARDS IN THE UNITED STATES, 1945-46

Date	Total stocks (net tons)	Days' supply at current rate of consumption on date of stock taking								
		Byproduct coke plants	Steel plants	Other industrials	Coal-gas plants	Electric utilities	Retail yards	Railroads	Cement Mills	Total
1945										
January 1	57,204,000	24	21	38	55	72	11	34	47	32
February 1	49,464,000	22	19	31	46	61	6	29	52	26
March 1	45,773,000	22	20	29	40	58	6	27	51	24
April 1	45,495,000	21	24	33	39	63	9	27	52	27
May 1	43,793,000	18	24	35	39	63	15	27	44	30
June 1	44,020,000	17	25	36	44	65	14	27	45	30
July 1	47,715,000	21	28	41	50	69	18	29	46	33
August 1	49,906,000	19	27	51	(1)	73	21	31	46	37
September 1	51,141,000	19	30	53	(1)	76	20	33	43	38
October 1	53,350,000	19	33	56	(1)	88	20	35	45	41
November 1	48,015,000	20	21	44	(1)	84	15	32	41	36
December 1	48,919,000	20	22	39	(1)	83	13	31	42	33
December 31	45,665,000	20	20	32	(1)	78	8	25	43	27
1946										
January 1	45,665,000	20	20	32	(1)	78	8	25	43	27
February 1	46,528,000	33	35	32	(1)	78	5	27	39	28
March 1	51,158,000	48	29	37	(1)	84	6	32	39	31
April 1	58,531,000	36	38	48	(1)	95	12	39	42	42
May 1	38,741,000	22	24	44	(1)	70	18	27	24	36
June 1	31,643,000	22	26	41	(1)	67	15	24	21	34
July 1	37,777,000	17	32	43	(1)	68	17	27	25	33
August 1	43,611,000	16	30	54	(1)	68	15	27	29	34
September 1	47,990,000	21	34	57	(1)	68	14	28	35	36
October 1	52,367,000	23	35	58	(1)	70	12	30	41	37
November 1.......	54,924,000	26	32	55	(1)	72	11	30	47	36
December 1	52,429,000	27	33	52	(1)	68	9	26	46	35
December 31	47,157,000	24	28	45	(1)	60	10	23	41	32

1/ Included in "Other industrials."

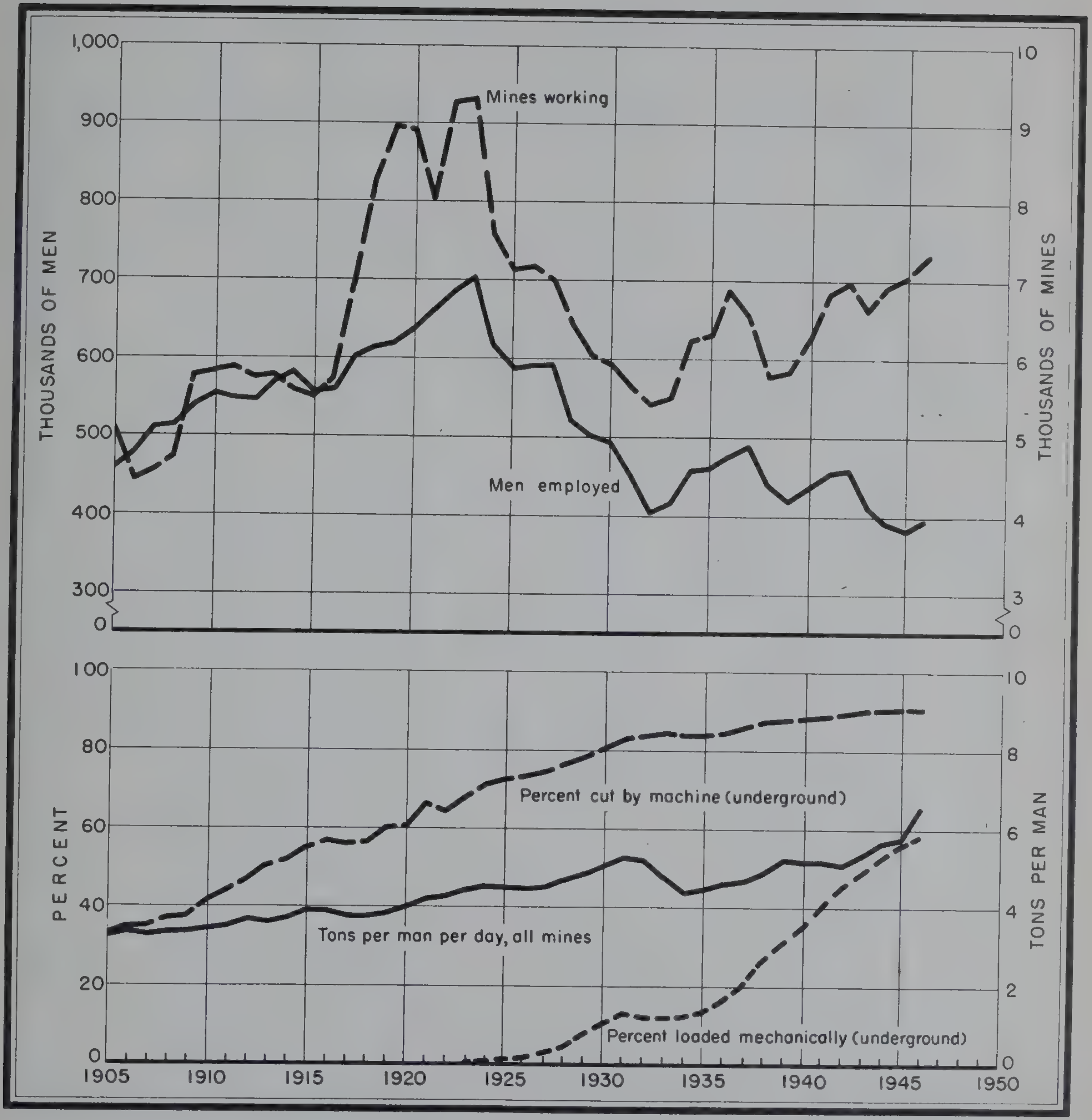

Figure 9. - Trends of employment, mechanization, and output per man at bituminous-coal and lignite mines in the United States, 1905-46.

TABLE 12. - SALIENT TRENDS IN BITUMINOUS-COAL AND LIGNITE-MINING INDUSTRY IN THE UNITED STATES, 1939-46

	1939	1940	1941	1942	1943	1944	1945	1946
Production:								
Loaded at mine for shipment by rail...net tons	331,189,620	380,387,674	425,184,319	482,814,042	495,863,581	527,135,489	490,471,988	475,257,057
Loaded at mine for shipment by water...do.	22,229,364	29,493,058	30,240,489	34,018,025	30,188,093	31,518,334	27,547,679	
Shipped by truck or wagon...do.	29,533,824	35,540,476	40,055,638	45,154,432	42,432,667	40,123,023	41,477,428	42,730,884
Taken by locomotive tenders at tipple...do.	826,556	939,058	1,099,582	920,213	779,154	807,679	694,555	731,748
Shipped by conveyor or tram to point of consumption...do.	4,317,465	5,887,994	6,067,697	7,121,116	7,476,717	7,206,392	6,416,327	5,700,870
Used by mine employees...do.	1,901,408	2,035,201	1,872,026	2,180,077	2,549,775	2,545,343	2,660,039	2,464,300
Used at mines for power and heat...do.	2,565,276	2,442,989	2,488,950	2,708,312	2,701,828	2,713,073	2,442,398	1,950,645
Made into beehive coke at mines...do.	2,089,475	4,045,050	7,140,544	7,776,720	8,185,254	7,526,907	5,906,913	5,086,564
Total production...do.	1/ 394,855,325	460,771,500	514,149,245	582,692,937	590,177,069	619,576,240	577,617,327	533,922,068
Number of active mines of commercial size:								
Class 1 (200,000 tons or more)...number	577	636	730	811	855	828	753	Data not available
Class 2 (100,000 to 200,000 tons)...do.	404	432	437	484	464	559	591	
Class 3 (50,000 to 100,000 tons)...do.	387	371	402	445	481	540	629	
Class 4 (10,000 to 50,000 tons)...do.	1,065	1,157	1,305	1,492	1,544	1,776	1,920	
Class 5 (1,000 to 10,000 tons)...do.	3,387	3,728	3,948	3,740	3,276	3,225	3,140	
Total number over 1,000 tons...do.	5,820	6,324	6,822	6,972	6,620	6,928	7,033	7,333
Average number of men employed at mines active:								
Underground...men	353,476	365,013	376,765	374,654	326,763	301,461	290,001	296,030
Surface:								
In strip pits...do.	8,791	8,983	10,861	12,893	16,643	21,035	23,261	25,408
All others...do.	59,521	65,079	69,355	74,444	72,601	70,851	69,838	74,996
Total...do.	421,788	439,075	456,981	461,991	416,007	393,347	383,100	396,434
Average number of days mines operated...days	178	202	216	246	264	278	261	214
Capacity of active mines with existing labor force:								
Per year of 308 days...net tons	683,000,000	703,000,000	733,000,000	730,000,000	689,000,000	686,000,000	682,000,000	768,000,000
Per year of 280 days...do.	621,000,000	639,000,000	666,000,000	663,000,000	626,000,000	624,000,000	620,000,000	699,000,000
Per year of 261 days...do.	579,000,000	595,000,000	621,000,000	618,000,000	583,000,000	582,000,000	578,000,000	651,000,000
Output per man per day...do.	5.25	5.19	5.20	5.12	5.38	5.67	5.78	6.30
Output per man per year...do.	936	1,049	1,125	1,261	1,419	1,575	1,508	1,347
Underground output cut by machine...do.	313,969,394	369,227,277	408,510,296	462,344,719	461,051,743	469,458,349	424,726,432	382,133,540
Percent of underground output cut by machine...percent	87.9	88.4	89.0	89.7	90.3	90.5	90.8	90.8
Underground output mechanically loaded...net tons	110,711,970	147,870,252	186,667,250	232,902,920	249,805,214	274,189,132	262,512,729	245,340,768
Percent of underground output mechanically loaded...percent	31.0	35.4	40.7	45.2	48.9	52.9	56.1	58.4
Quantity mined by stripping...net tons	37,722,583	43,167,336	55,071,609	67,202,663	79,685,175	100,898,376	109,986,865	112,963,717
Percent mined by stripping...percent	9.6	9.4	10.7	11.5	13.5	16.3	19.0	21.1
Quantity cleaned by wet or pneumatic process 2/...net tons	79,429,426	102,269,753	117,539,522	142,187,346	145,575,849	158,727,129	147,885,936	138,669,837
Percent cleaned by wet or pneumatic process 2/...percent	20.1	22.2	22.9	24.4	24.7	25.6	25.6	26.0

1/ Includes 202,337 tons of coal reported as net changes in stocks at mines, January 1, 1939 to January 1, 1940.

2/ Includes central washeries operated by consumers.

TABLE 13. - GROWTH OF THE BITUMINOUS-COAL AND LIGNITE-MINING INDUSTRY IN THE UNITED STATES, 1890-1946

Year	Production (net tons)	Value		Men employed	Number of mines	Calculated capacity (millions of net tons)—		
		Total 1/	Average per ton 1/			At 308 days	At 280 days	At 261 days
1890	111,302,322	$ 110,420,801	$ 0.99	192,204	(2)	152	137	129
1891	117,901,238	117,188,400	.99	205,803	(2)	163	148	138
1892	126,856,567	125,124,381	.99	212,893	(2)	178	162	151
1893	128,385,231	122,751,618	.96	230,365	(2)	194	174	164
1894	118,820,405	107,653,501	.91	244,603	(2)	214	196	181
1895	135,118,193	115,779,771	.86	239,962	2,555	215	196	182
1896	137,640,276	114,891,515	.83	244,171	2,599	221	202	187
1897	147,617,519	119,595,224	.81	247,817	2,454	232	213	197
1898	166,593,623	132,608,713	.80	255,717	2,862	243	221	206
1899	193,323,187	167,952,104	.87	271,027	3,245	254	230	216
1900	212,316,112	220,930,313	1.04	304,375	(2)	279	255	237
1901	225,828,149	236,422,049	1.05	340,235	(2)	309	281	262
1902	260,216,844	290,858,483	1.12	370,056	(2)	348	316	295
1903	282,749,348	351,687,933	1.24	415,777	(2)	387	350	328
1904	278,659,689	305,397,001	1.10	437,832	4,650	425	386	360
1905	315,062,785	334,658,294	1.06	460,629	5,060	460	417	390
1906	342,874,867	381,162,115	1.11	478,425	4,430	496	451	420
1907	394,759,112	451,214,842	1.14	513,258	4,550	520	473	440
1908	332,573,944	374,135,268	1.12	516,264	4,730	531	482	450
1909	379,744,257	405,486,777	1.07	543,152	5,775	560	510	474
1910	417,111,142	469,281,719	1.12	555,533	5,818	592	538	502
1911	405,907,059	451,375,819	1.11	549,775	5,887	593	538	502
1912	450,104,982	517,983,445	1.15	548,632	5,747	622	566	527
1913	478,435,297	565,234,952	1.18	571,882	5,776	635	577	538
1914	422,703,970	493,309,244	1.17	→ 583,506	5,592	668	608	566
1915	442,624,426	502,037,688	1.13	557,456	5,502	672	610	569
1916	502,519,682	665,116,077	1.32	561,102	5,726	673	613	570
1917	551,790,563	1,249,272,837	2.26	603,143	6,939	699	636	593
1918	579,385,820	1,491,809,940	2.58	615,305	8,319	717	650	607
1919	465,860,058	1,160,616,013	2.49	621,998	8,994	736	669	624
1920	568,666,683	2,129,933,000	3.75	639,547	8,921	796	725	675
1921	415,921,950	1,199,983,600	2.89	663,754	8,038	860	781	729
1922	422,268,099	1,274,820,000	3.02	687,958	9,299	916	832	776
1923	564,564,662	1,514,621,000	2.68	704,793	9,331	970	885	823
1924	483,686,538	1,062,626,000	2.20	619,604	7,586	871	792	738
1925	520,052,741	1,060,402,000	2.04	588,493	7,144	822	748	696
1926	573,366,985	1,183,412,000	2.06	593,647	7,177	821	747	696
1927	517,763,352	1,029,657,000	1.99	593,918	7,011	835	759	708
1928	500,744,970	933,774,000	1.86	522,150	6,450	760	691	644
1929	534,988,593	952,781,000	1.78	502,993	6,057	752	679	638
1930	467,526,299	795,483,000	1.70	493,202	5,891	770	700	653
1931	382,089,396	588,895,000	1.54	450,213	5,642	736	669	623
1932	309,709,872	406,677,000	1.31	406,380	5,427	653	594	554
1933	333,630,533	445,788,000	1.34	418,703	5,555	615	559	521
1934	359,368,022	628,383,000	1.75	458,011	6,258	622	565	527
1935	372,373,122	658,063,000	1.77	462,403	6,315	640	582	543
1936	439,087,903	770,955,000	1.76	477,204	6,875	680	618	576
1937	445,531,449	864,042,000	1.94	491,864	6,548	710	646	601
1938	348,544,764	678,653,000	1.95	441,333	5,777	663	602	562
1939	394,855,325	728,348,366	1.84	421,788	5,820	683	621	579
1940	460,771,500	879,327,227	1.91	439,075	6,324	703	639	595
1941	514,149,245	1,125,362,836	2.19	456,981	6,822	733	666	621
1942	582,692,937	1,373,990,608	2.36	461,991	6,972	730	663	618
1943	590,177,069	1,584,644,477	2.69	416,007	6,620	689	626	583
1944	619,576,240	1,810,900,542	2.92	393,347	6,928	686	624	582
1945	577,617,327	1,768,204,320	3.06	383,100	7,033	682	620	578
1946	533,922,068	1,835,539,476	3.44	396,434	7,333	768	699	651

1/ Figures on value and value per ton for the years 1890 to 1936, inclusive, and 1939, exclude selling expense. Figures for other years include selling expense.

2/ Data not available.

TABLE 13. - GROWTH OF THE BITUMINOUS-COAL AND LIGNITE-MINING INDUSTRY IN THE UNITED STATES, 1890-1946 - Continued

Year	Average number of days worked	Average number of days lost on account of strikes—		Net tons per man—		Percent of underground production—		Percent of total production—	
		Per man employed	Per man on strike	Per day	Per year	Cut by machines 1/	Mechanically loaded	Mechanically cleaned 2/	Mined by stripping
1890	226	(3)	(3)	2.56	579	(3)	(3)	(3)	(3)
1891	223	(3)	(3)	2.57	573	5.3	(3)	(3)	(3)
1892	219	(3)	(3)	2.72	596	(3)	(3)	(3)	(3)
1893	204	(3)	(3)	2.73	557	(3)	(3)	(3)	(3)
1894	171	(3)	(3)	2.84	486	(3)	(3)	(3)	(3)
1895	194	(3)	(3)	2.90	563	(3)	(3)	(3)	(3)
1896	192	(3)	(3)	2.94	564	11.9	(3)	(3)	(3)
1897	196	(3)	(3)	3.04	596	15.3	(3)	(3)	(3)
1898	211	(3)	(3)	3.09	651	19.5	(3)	(3)	(3)
1899	234	8	46	3.05	713	22.7	(3)	(3)	(3)
1900	234	5	43	2.98	697	24.9	(3)	(3)	(3)
1901	225	2	35	2.94	664	25.6	(3)	(3)	(3)
1902	230	7	44	3.06	703	26.8	(3)	(3)	(3)
1903	225	3	28	3.02	680	27.6	(3)	(3)	(3)
1904	202	8	44	3.15	637	28.2	(3)	(3)	(3)
1905	211	2	23	3.24	684	32.8	(3)	(3)	(3)
1906	213	28	63	3.36	717	34.7	(3)	2.7	(3)
1907	234	1	14	3.29	769	35.1	(3)	2.9	(3)
1908	193	11	38	3.34	644	37.0	(3)	3.6	(3)
1909	209	1	29	3.34	699	37.5	(3)	3.8	(3)
1910	217	35	89	3.46	751	41.7	(3)	3.8	(3)
1911	211	2	27	3.50	738	43.9	(3)	(3)	(3)
1912	223	10	35	3.68	820	46.8	(3)	3.9	(3)
1913	232	4	36	3.61	837	50.7	(3)	4.6	(3)
1914	195	19	80	3.71	724	51.8	(3)	4.8	0.3
1915	203	4	61	3.91	794	55.3	(3)	4.7	.6
1916	230	4	26	3.90	896	56.9	(3)	4.6	.8
1917	243	4	17	3.77	915	56.1	(3)	4.6	1.0
1918	249	1	7	3.78	942	56.7	(3)	3.8	1.4
1919	195	25	37	3.84	749	60.0	(3)	3.6	1.2
1920	220	6	22	4.00	881	60.7	(3)	3.3	1.5
1921	149	3	23	4.20	627	66.4	(3)	3.4	1.2
1922	142	78	117	4.28	609	64.8	(3)	(3)	2.4
1923	179	2	20	4.47	801	68.3	0.3	3.8	2.1
1924	171	7	73	4.56	781	71.5	.7	(3)	2.8
1925	195	2	30	4.52	884	72.9	1.2	(3)	3.2
1926	215	1	24	4.50	966	73.8	1.8	(3)	3.0
1927	191	45	153	4.55	872	74.9	3.3	5.3	3.6
1928	203	8	83	4.73	959	76.9	4.5	5.7	4.0
1929	219	(4)	11	4.85	1,064	78.4	7.4	6.9	3.8
1930	187	2	43	5.06	948	81.0	10.5	8.3	4.3
1931	160	3	35	5.30	849	83.2	13.1	9.5	5.0
1932	146	19	120	5.22	762	84.1	12.3	9.8	6.3
1933	167	9	30	4.78	797	84.7	12.0	10.4	5.5
1934	178	3	15	4.40	785	84.1	12.2	11.1	5.8
1935	179	(3)	(3)	4.50	805	84.2	13.5	12.2	6.4
1936	199	2	21	4.62	920	84.8	16.3	13.9	6.4
1937	193	(3)	(3)	4.69	906	(3)	20.2	14.6	7.1
1938	162	1	13	4.89	790	87.5	26.7	18.2	8.7
1939	178	25	36	5.25	936	87.9	31.0	20.1	9.6
1940	202	1	8	5.19	1,049	88.4	35.4	22.2	9.4
1941	216	20	27	5.20	1,125	89.0	40.7	22.9	10.7
1942	246	1	7	5.12	1,261	89.7	45.2	24.4	11.5
1943	264	(3)	(3)	5.38	1,419	90.3	48.9	24.7	13.5
1944	278	(3)	(3)	5.67	1,575	90.5	52.9	25.6	16.3
1945	261	(3)	(3)	5.78	1,508	90.8	56.1	25.6	19.0
1946	214	(3)	(3)	6.30	1,347	90.8	58.4	26.0	21.1

1/ Percentages for the years 1890 to 1913, inclusive, are of total production, as a separation of strip mine and underground production is not available for these years.

2/ For the years 1906 to 1926, inclusive, these percentages are exclusive of coal cleaned at central washeries operated by consumers; after 1926, when data became available on the tonnage cleaned by consumer-operated plants, the percentages include the total tons cleaned at the mines and at consumer-operated washeries.

3/ Data not available.

4/ One-half day or less.

TABLE 14. - COAL PRODUCED IN THE UNITED STATES, BY STATES, 1936-46 WITH PRODUCTION OF MAXIMUM YEAR AND CUMULATIVE PRODUCTION FROM EARLIEST RECORD TO END OF 1946, IN THOUSANDS OF NET TONS

State	Maximum production		Production by years											Total production from earliest record to end of 1946
	Year	Quantity	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	
Alabama	1926	21,001	12,229	12,440	11,062	12,047	15,324	15,464	19,301	17,160	18,752	18,236	16,183	771,495
Arkansas	1907	2,670	1,623	1,511	1,197	1,152	1,454	1,574	1,985	1,718	1,972	1,854	1,631	86,881
Colorado	1917	12,483	6,812	7,187	5,663	5,923	6,589	6,949	8,086	8,324	8,168	7,621	5,914	454,496
Georgia	1903	416	(1)	(1)	(1)	(1)	(1)	(1)	31	14	24	43	114	(1)
Illinois	1918	89,291	50,927	51,602	41,912	46,783	50,610	54,703	65,071	72,631	76,792	73,011	63,469	2,950,873
Indiana	1918	30,679	17,822	17,765	14,759	16,943	18,869	22,484	25,388	25,065	27,962	25,183	21,697	919,440
Iowa	1917	8,966	3,961	3,637	3,103	2,948	3,231	2,939	2,948	2,771	2,141	2,046	1,788	332,654
Kansas	1918	7,562	2,944	2,893	2,654	2,675	3,579	4,008	4,230	3,437	3,369	3,228	2,493	258,737
Kentucky	1944	71,356	47,522	47,086	38,545	42,557	49,141	53,710	62,231	63,211	71,356	69,593	66,553	1,726,866
Maryland	1907	5,533	1,704	1,549	1,281	1,443	1,503	1,701	2,001	1,933	1,870	1,763	2,003	255,445
Michigan	1907	2,036	626	562	494	457	410	311	231	169	140	126	80	46,334
Missouri	1917	5,671	3,985	4,091	3,436	3,273	3,097	3,145	3,520	4,310	4,779	3,983	3,733	245,562
Montana (bituminous and lignite)	1944	4,844	2,988	2,965	2,732	2,804	2,867	3,254	3,829	4,833	4,844	4,467	3,723	148,421
New Mexico	1918	4,023	1,597	1,715	1,239	1,230	1,111	1,251	1,669	1,851	1,744	1,484	1,280	117,629
North Carolina	1922	79	(1)	—	—	—	—	—	—	—	—	—	—	(1)
North Dakota (lignite)	1946	2,555	2,215	2,251	2,050	2,072	2,218	2,309	2,537	2,500	2,366	2,522	2,555	58,952
Ohio	1920	45,878	24,110	25,178	18,591	20,289	22,772	29,319	32,764	32,255	33,877	32,737	32,314	1,590,465
Oklahoma	1920	4,849	1,540	1,600	1,245	1,188	1,646	1,771	2,387	2,838	3,209	2,909	2,647	148,870
Pennsylvania (bituminous)	1918	178,551	109,887	111,002	77,705	92,584	116,603	130,240	144,073	141,050	146,052	132,965	125,497	6,994,955
Tennessee	1942	8,158	5,108	5,213	4,472	5,185	6,008	7,045	8,158	7,179	7,266	6,271	5,618	307,399
Texas (bituminous and lignite)	1913	2,429	843	910	879	826	621	353	304	153	2/ 109	2/ 80	2/ 56	60,744
Utah	1944	7,119	3,247	3,810	2,947	3,285	3,576	4,077	5,517	6,666	7,119	6,679	5,994	177,464
Virginia	1943	20,280	11,662	13,795	12,283	13,531	15,348	18,441	20,136	20,280	19,514	17,235	15,527	501,369
Washington	1918	4,082	1,812	2,002	1,567	1,690	1,650	1,841	1,953	1,528	1,524	1,357	991	139,212
West Virginia	1944	164,704	117,926	118,646	93,288	108,362	126,438	140,250	155,882	158,804	164,704	152,035	144,020	4,494,114
Wyoming	1945	9,847	5,781	5,918	5,204	5,373	5,808	6,646	8,133	9,155	9,540	9,847	7,635	342,997
Other States	—	—	217	203	237	235	299	364	328	342	383	342	407	64,621
Total bituminous and lignite	1944	619,576	439,088	445,531	348,545	394,855	460,772	514,149	582,693	590,177	619,576	577,617	533,922	23,195,995
Pennsylvania anthracite	1917	99,612	54,580	51,856	46,099	51,487	51,485	56,368	60,328	60,644	63,701	54,934	60,507	4,741,911
Grand total	—	—	493,668	497,387	394,644	446,342	512,257	570,517	643,021	650,821	683,277	632,551	594,429	27,937,906

1/ Included under "Other States."
2/ Lignite only.

SUMMARY BY STATES AND DISTRICTS

TABLE 15. - NUMBER OF MINES, PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES, IN 1946

(Exclusive of mines producing less than 1,000 tons)

State	Number of active mines	Disposition of coal produced (net tons)								Average value per ton 2/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Loaded at mine directly into railroad cars or river barges	Hauled by truck to railroad siding for shipment by rail and to waterway for shipment by water	Shipped by truck or wagon (excluding coal used by mine employees)	Taken by locomotive tenders at tipple	Shipped by conveyor or tram to point of consumption	Used by mine employees	Used at mines for power and heat and made into beehive coke at mines 1/	Total quantity		Underground	Surface: In strip pits	Surface: All others	Total			
Alabama	397	13,210,938	992,205	1,424,349	57,856	360,320	75,479	62,151	16,183,298	$4.81	15,812	904	3,416	20,132	213	4,289,350	3.77
Alaska	5	308,195	—	51,614	716	—	—	6,284	366,809	6.42	184	20	76	280	282	79,022	4.64
Arizona	2	—	—	6,379	—	—	35	—	6,414	3.79	16	—	2	18	156	2,804	2.29
Arkansas	61	1,426,382	104,066	95,070	10	—	3,218	2,728	1,631,474	5.82	1,505	321	418	2,244	180	404,179	4.04
Colorado	171	4,077,677	280,100	1,272,907	8,613	47,024	36,175	1/ 191,012	5,913,508	4.04	4,823	54	1,374	6,251	183	1,142,001	5.18
Georgia	3	109,978	—	3,000	—	—	380	405	113,763	4.70	57	40	26	123	253	31,167	3.65
Illinois	299	54,466,129	1,716,287	6,202,157	3,061	119,430	291,839	669,682	63,468,585	2.61	22,395	1,878	8,197	32,470	217	7,032,257	9.03
Indiana	118	18,841,418	568,957	1,734,654	—	429,549	33,632	88,737	21,696,947	2.61	5,029	1,976	2,585	9,590	207	1,980,545	10.96
Iowa	118	724,352	189,855	857,978	—	—	12,657	3,291	1,788,133	3.68	1,695	202	370	2,267	173	393,254	4.55
Kansas	54	2,222,482	34,241	177,657	1,730	44,812	6,175	6,288	2,493,385	2.78	518	507	435	1,460	209	305,433	8.16
Kentucky	1,637	51,657,212	7,885,938	6,368,801	54,576	75,198	320,954	1/ 190,298	66,552,977	3.41	46,186	1,314	9,394	56,894	212	12,048,667	5.52
Maryland	103	1,194,584	394,329	404,049	762	100	5,998	2,723	2,002,545	4.14	1,400	338	416	2,154	184	396,881	5.05
Michigan	3	29,539	—	42,168	—	—	1,728	6,555	79,990	6.45	128	—	22	150	184	27,596	2.90
Missouri	78	2,929,342	17,579	777,774	—	—	6,103	2,017	3,732,815	2.79	870	527	504	1,901	204	387,131	9.64
Montana: Bituminous	29	3,552,780	24,884	90,936	—	—	8,298	6,015	3,682,913	1.75	686	98	369	1,153	205	236,797	15.55
Lignite	8	—	—	40,013	—	—	—	—	40,013	2.63	27	4	8	39	175	6,837	5.85
Total Montana	37	3,552,780	24,884	130,949	—	—	8,298	6,015	3,722,926	1.76	713	102	377	1,192	204	243,634	15.28
New Mexico	26	1,123,197	18,472	97,301	—	—	8,532	32,777	1,280,279	4.14	993	—	276	1,269	218	276,495	4.63
North Dakota (lignite)	47	2,097,317	—	373,631	18	—	67,963	15,753	2,554,682	1.68	156	255	263	674	241	162,388	15.73
Ohio	567	25,326,829	1,286,207	5,507,937	421	112,623	53,479	26,766	32,314,262	2.99	12,263	2,924	4,331	19,518	207	4,038,075	8.00
Oklahoma	67	2,339,040	147,585	146,690	—	—	3,324	10,741	2,647,380	3.75	1,049	428	463	1,940	209	405,268	6.53
Oregon	2	—	7,900	9,218	—	—	35	—	17,153	4.40	72	—	13	85	249	21,164	.81
Pennsylvania	1,994	87,812,344	17,398,447	12,010,662	209,490	2,753,995	536,565	1/4,775,353	125,496,856	3.66	74,459	9,324	16,693	100,476	207	20,836,340	6.02
South Dakota (lignite)	3	—	1,680	15,266	—	—	—	—	16,946	2.15	—	14	—	14	169	2,364	7.17
Tennessee	113	4,829,983	430,144	244,014	36,193	—	60,365	17,653	5,618,352	3.84	5,603	75	1,056	6,734	197	1,323,950	4.24
Texas (lignite)	1	55,604	—	—	374	—	—	—	55,978	.83	—	10	15	25	248	6,200	9.03
Utah	48	5,629,156	64,092	254,381	—	—	16,882	1/ 29,502	5,994,013	3.58	2,726	—	988	3,714	230	853,503	7.02
Virginia	156	14,069,273	687,918	362,231	—	—	114,393	1/ 293,080	15,526,895	3.84	11,569	245	2,392	14,206	228	3,243,708	4.79
Washington	46	605,280	52,945	299,508	9,804	—	10,609	12,981	991,127	5.47	926	69	378	1,373	211	289,418	3.42
West Virginia	1,126	125,211,886	11,746,946	3,713,902	348,124	1,757,819	755,638	1/ 485,777	144,020,092	3.65	81,608	3,693	19,450	104,751	225	23,524,248	6.12
Wyoming	51	7,336,297	19,066	146,637	—	—	33,844	98,640	7,634,484	3.00	3,275	188	1,066	4,529	215	972,644	7.85
Total	7,333	431,187,214	44,069,843	42,730,884	731,748	5,700,870	2,464,300	7,037,209	533,922,068	3.44	296,030	25,408	74,996	396,434	214	84,719,686	6.30

1/ Includes coal made into beehive coke at mines in following States in 1946: Colorado, 105,297 tons; Kentucky, 133,500; Pennsylvania, 4,345,361; Utah, 12,075; Virginia, 271,243; and West Virginia, 219,088 - a grand total of 5,086,564 tons.

2/ Value received or charged for coal f.o.b. mine, including selling cost. (Includes a value for coal not sold but used by producer, such as mine fuel and coal coked [not coke] as estimated by producer, at average prices that might have been received if such coal had been sold commercially.)

TABLE 15A. - NUMBER OF MINES, PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY DISTRICTS, IN 1946

(Districts as defined in the Bituminous Coal Act of 1937 and modifications thereto. Exclusive of mines producing less than 1,000 tons)

District	Number of active mines	Disposition of coal produced (net tons)								Average value per ton 2/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Loaded at mine directly into railroad cars or river barges	Hauled by truck to railroad siding for shipment by rail and to waterway for shipment by water	Shipped by truck or wagon (excluding coal used by mine employees)	Taken by locomotive tenders at tipple	Shipped by conveyor or tram to point of consumption	Used by mine employees	Used at mines for power and heat and made into beehive coke at mines 1/	Total quantity		Under-ground	Surface		Total			
												In strip pits	All others				
1. Eastern Pennsylvania	1,305	36,193,526	10,912,597	5,112,180	27,638	1,390,789	204,344	1/ 603,905	54,444,979	$3.81	33,101	5,783	8,177	47,061	201	9,441,959	5.77
2. Western Pennsylvania	818	53,833,726	7,320,875	7,520,482	182,614	1,363,306	346,252	1/ 4,207,215	74,774,470	3.57	43,280	4,177	9,113	56,570	212	12,003,889	6.23
3. Northern West Virginia	443	29,995,780	8,104,486	1,754,310	137,773	498,589	59,555	1/ 197,044	40,747,537	3.19	18,249	2,456	5,298	26,003	191	4,970,449	8.20
4. Ohio	567	25,326,829	1,286,207	5,507,937	421	112,623	53,479	26,766	32,314,262	2.99	12,263	2,924	4,331	19,518	207	4,038,075	8.00
5. Michigan	3	29,539	—	42,168	—	—	1,728	6,555	79,990	6.45	128	—	22	150	184	27,596	2.90
6. Panhandle	40	2,027,868	606,237	714,548	177,843	814,265	4,817	14,802	4,360,380	3.30	2,438	224	445	3,107	220	684,699	6.37
7. Southern Numbered 1	311	50,037,227	1,286,014	438,626	11,118	142,297	416,065	1/ 200,427	52,531,774	4.14	35,766	568	7,881	44,215	241	10,649,602	4.93
8. Southern Numbered 2	1,903	97,712,234	9,244,892	5,584,549	105,022	377,866	710,326	1/ 521,678	114,256,567	3.69	80,059	813	16,264	97,136	221	21,468,407	5.32
9. West Kentucky	262	14,464,554	792,832	1,897,956	—	—	37,032	18,849	17,211,223	2.35	6,624	938	2,022	9,584	199	1,903,744	9.04
10. Illinois	299	54,466,129	1,716,287	6,202,157	3,061	119,430	291,839	669,682	63,468,585	2.61	22,395	1,878	8,197	32,470	217	7,032,257	9.03
11. Indiana	118	18,841,418	568,957	1,734,654	—	429,549	33,632	88,737	21,696,947	2.61	5,029	1,976	2,585	9,590	207	1,980,545	10.96
12. Iowa	118	724,352	189,855	857,978	—	—	12,657	3,291	1,788,133	3.68	1,695	202	370	2,267	173	393,254	4.55
13. Southeastern	447	13,831,283	1,267,994	1,508,357	64,993	360,320	91,381	63,520	17,187,848	4.77	17,177	974	3,643	21,794	210	4,571,562	3.76
14. Arkansas-Oklahoma	83	1,599,320	149,904	113,735	10	—	3,693	3,644	1,870,306	5.77	1,899	355	526	2,780	174	483,666	3.87
15. Southwestern (bituminous and lignite)	178	7,373,530	153,567	1,083,456	2,104	44,812	15,127	18,130	8,690,726	3.00	2,043	1,438	1,309	4,790	214	1,024,545	8.48
16. Northern Colorado	30	1,093,358	27,905	676,696	—	37,106	14,631	27,226	1,876,922	3.68	1,341	16	289	1,646	186	306,744	6.12
17. Southern Colorado	145	3,980,920	252,195	602,010	8,613	9,918	25,609	1/ 167,501	5,046,766	4.15	4,077	38	1,257	5,372	188	1,009,694	5.00
18. New Mexico	24	126,596	18,472	97,881	—	—	4,502	29,062	276,513	4.98	414	—	106	520	202	104,862	2.64
19. Wyoming	51	7,336,297	19,066	146,637	—	—	33,844	98,640	7,634,484	3.00	3,275	188	1,066	4,529	215	972,644	7.85
20. Utah	48	5,629,156	64,092	254,381	—	—	16,882	1/ 29,502	5,994,013	3.58	2,726	—	988	3,714	230	853,503	7.02
21. North-South Dakota (lignite)	50	2,097,317	1,680	388,897	18	—	67,963	15,753	2,571,628	1.69	156	269	263	688	239	164,752	15.61
22. Montana (bituminous and lignite)	37	3,552,780	24,884	130,949	—	—	8,298	6,015	3,722,926	1.76	713	102	377	1,192	204	243,634	15.28
23. Washington	53	913,475	60,845	360,340	10,520	—	10,644	19,265	1,375,089	5.71	1,182	89	467	1,738	224	389,604	3.53
Total	7,333	431,187,214	44,069,843	42,730,884	731,748	5,700,870	2,464,300	7,037,209	533,922,068	3.44	296,030	25,408	74,996	396,434	214	84,719,686	6.30

1/ Includes coal made into beehive coke at mines in following districts in 1946; District 1, 223,033 tons; District 2, 4,122,328; District 3, 164,441; District 7, 54,647; District 8, 404,743; District 17, 105,297; and District 20, 12,075 - a grand total of 5,086,564 tons.

2/ Value received or charged for coal f.o.b. mine, including selling cost. (Includes a value for coal not sold but used by producer, such as mine fuel and coal coked /not coke/ as estimated by producer at average prices that might have been received if such coal had been sold commercially.)

TABLE 16. - BITUMINOUS COAL AND LIGNITE LOADED FOR SHIPMENT BY RAILROADS AND WATERWAYS IN THE UNITED STATES, AS REPORTED BY MINE OPERATORS, IN NET TONS, IN 1946 1/

Route	State	Quantity	
		By State	Total for route
RAILROADS			
Alabama Central	Alabama	127,654	127,654
Alabama Great Southern	Alabama	247,298	247,298
Alaska	Alaska	308,195	308,195
Algiers, Winslow, & Western	Indiana	2,470,617	2,470,617
Alton	Illinois	865,577	865,577
Artemus-Jellico	Kentucky	393,019	393,019
Atchison, Topeka, & Santa Fe	Colorado	229,470	1,997,669
	Illinois	658,250	
	Kansas	326,468	
	New Mexico	783,481	
Baltimore & Ohio	Illinois	210,780	42,220,589
	Indiana	626,014	
	Maryland	91,759	
	Ohio	4,260,261	
	Pennsylvania	11,467,082	
	West Virginia	25,564,693	
Bessemer & Lake Erie	Pennsylvania	3,361,842	3,361,842
Bevier & Southern	Missouri	419,393	419,393
Brimstone	Tennessee	37,778	37,778
Buffalo Creek & Gauley	West Virginia	810,795	810,795
Cambria & Indiana	Pennsylvania	3,344,739	3,344,739
Campbell's Creek	West Virginia	821,121	821,121
Carbon County	Utah	1,015,629	1,015,629
Central of Georgia	Alabama	777,237	887,215
	Georgia	109,978	
Chesapeake & Ohio	Kentucky	12,439,297	60,389,551
	Ohio	1,355,710	
	West Virginia	46,594,544	
Cheswick & Harmar	Pennsylvania	711,062	711,062
Chicago, Burlington, & Quincy	Colorado	170,138	11,284,213
	Illinois	9,340,126	
	Iowa	247,179	
	Missouri	29,434	
	Wyoming	1,497,336	
Chicago & Eastern Illinois	Illinois	2,508,925	3,519,395
	Indiana	1,010,470	
Chicago & Illinois Midland	Illinois	5,629,451	5,629,451
Chicago, Indianapolis & Louisville	Indiana	676,015	676,015
Chicago, Milwaukee, St. Paul, & Pacific	Indiana	4,989,276	5,921,848
	Iowa	184,177	
	Missouri	1,261	
	Montana (bituminous)	704,366	
	North Dakota (lignite)	41,031	
	Washington	1,737	
Chicago & North Western	Illinois	2,922,136	2,922,136
Chicago, Rock Island, & Pacific	Arkansas	44,872	1,108,659
	Illinois	515,980	
	Iowa	150,419	
	Missouri	210,377	
	Oklahoma	187,011	

See footnote at end of table.

TABLE 16. - BITUMINOUS COAL AND LIGNITE LOADED FOR SHIPMENT BY RAILROADS AND WATERWAYS IN THE UNITED STATES, AS REPORTED BY MINE OPERATORS, IN NET TONS, IN 1946 1/ - Continued

Route	State	Quantity	
		By State	Total for route
RAILROADS - Continued			
Cleveland, Cincinnati, Chicago, & St. Louis	Illinois	4,789,751	7,327,334
	Indiana	2,537,583	
Clinchfield	Kentucky	80,314	2,654,853
	Virginia	2,574,539	
Colorado & Southeastern	Colorado	87,725	87,725
Colorado & Southern	Colorado	328,067	328,067
Colorado & Wyoming	Colorado	414,331	414,331
Conemaugh & Black Lick	Pennsylvania	50,526	50,526
Cumberland & Pennsylvania	Maryland	572,123	572,123
Dardanelle & Russellville Ry. Co.	Arkansas	25,643	25,643
Denver & Intermountain	Colorado	99,849	99,849
Denver & Rio Grande Western	Colorado	1,300,711	4,247,160
	New Mexico	18,472	
	Utah	2,927,977	
Denver & Salt Lake	Colorado	929,703	929,703
Detroit, Toledo, & Ironton	Ohio	16,045	16,045
East Broad Top Railroad & Coal Co.	Pennsylvania	320,955	320,955
Erie	Ohio	88,913	733,688
	Pennsylvania	644,775	
Evansville & Ohio Valley	Indiana	17,433	17,433
Evansville Suburban & Newburgh	Indiana	237,504	237,504
Fort Dodge, Des Moines, & Southern	Iowa	51,274	51,274
Fort Smith & Van Buren	Oklahoma	60,595	60,595
Galesburg & Great Eastern	Illinois	656,263	656,263
Great Northern	Montana (bituminous)	108,118	749,822
	North Dakota (lignite)	577,864	
	Washington	63,840	
Gulf, Mobile & Ohio	Alabama	249,193	1,470,063
	Illinois	1,220,870	
Harriman & Northeastern	Tennessee	67,145	67,145
Huntingdon & Broad Top Mountain Railroad & Coal Co.	Pennsylvania	867,254	867,254
Illinois Central	Alabama	180,376	22,063,924
	Illinois	12,585,834	
	Indiana	162,322	
	Kentucky	9,135,392	
Illinois Terminal	Illinois	512,629	512,629
Interstate	Kentucky	187,605	2,497,515
	Virginia	2,309,910	
Iowa Southern Utilities Company	Iowa	43,894	43,894
Johnstown & Stony Creek	Pennsylvania	232,107	232,107
Joplin - Pittsburg	Kansas	323,704	323,704
Kanawha Central	West Virginia	107,079	107,079
Kansas City Southern	Arkansas	138,345	1,107,234
	Missouri	946,451	
	Oklahoma	22,438	
Kansas, Oklahoma & Gulf	Oklahoma	10,775	10,775
Kelley's Creek & Northwestern	West Virginia	1,087,599	1,087,599
Kentucky & Tennessee	Kentucky	670,304	670,304
Lake Erie, Franklin, & Clarion	Pennsylvania	370,250	370,250
Laramie, North Park, & Western	Colorado	22,731	22,731
Ligonier Valley	Pennsylvania	116,757	116,757
Litchfield & Madison	Illinois	723,276	723,276

See footnote at end of table.

TABLE 16. - BITUMINOUS COAL AND LIGNITE LOADED FOR SHIPMENT BY RAILROADS AND WATERWAYS IN THE UNITED STATES, AS REPORTED BY MINE OPERATORS, IN NET TONS, IN 1946 1/ - Continued

Route	State	Quantity	
		By State	Total for route
RAILROADS - Continued			
Louisville & Nashville	Alabama	3,351,687	33,945,364
	Illinois	87,210	
	Kentucky	29,521,666	
	Tennessee	822,584	
	Virginia	162,217	
Mary Lee	Alabama	536,032	536,032
Midland Valley	Arkansas	243,361	494,366
	Oklahoma	251,005	
Minneapolis & St. Louis	Illinois	1,919,691	1,972,186
	Iowa	52,495	
Minneapolis, St. Paul, & Sault Ste. Marie	North Dakota (lignite)	511,593	511,593
Missouri-Illinois	Illinois	18,349	18,349
Missouri-Kansas-Texas	Kansas	192,135	517,105
	Missouri	236,387	
	Oklahoma	88,583	
Missouri Pacific	Arkansas	863,406	8,413,587
	Illinois	6,286,551	
	Kansas	777,761	
	Missouri	244,730	
	Oklahoma	241,139	
Monongahela	Pennsylvania	3,708,748	12,628,855
	West Virginia	8,920,107	
Montana, Wyoming, & Southern	Montana (bituminous)	314,532	314,532
Montour	Pennsylvania	6,089,622	6,089,622
Nashville, Chattanooga, & St. Louis	Alabama	2,195	732,913
	Tennessee	730,718	
New Haven and Dunbar	Pennsylvania	8,747	8,747
New York Central (includes coal shipped over Kanawha and Michigan, Kelley's Creek, Toledo, and Ohio Central, and Zanesville and Western)	Ohio	7,033,047	14,129,539
	Pennsylvania	5,366,401	
	West Virginia	1,730,091	
Nicholas, Fayette, & Greenbrier	West Virginia	1,617,206	1,617,206
Norfolk & Western	Kentucky	5,684,388	42,940,316
	Virginia	8,778,189	
	West Virginia	28,477,739	
North East Oklahoma	Kansas	3,100	3,100
Northern Pacific	Montana (bituminous)	2,450,648	3,904,207
	North Dakota (lignite)	968,509	
	Washington	485,050	
Oklahoma City-Ada-Atoka	Oklahoma	216,791	216,791
Pacific Coast	Washington	63,793	63,793
Pennsylvania (includes Pittsburgh, Cincinnati, Chicago, and St. Louis)	Illinois	181,693	54,102,947
	Indiana	4,971,845	
	Ohio	7,373,172	
	Pennsylvania	40,881,995	
	West Virginia	694,242	
Peoria Terminal	Illinois	332,726	332,726
Pere Marquette	Michigan	29,539	29,539
Pittsburg County	Oklahoma	2,914	2,914
Pittsburg & Lake Erie	Pennsylvania	1,705,053	1,705,053
Pittsburg & Shawmut	Pennsylvania	2,381,400	2,381,400
Pittsburg, Shawmut & Northern	Pennsylvania	306,965	306,965
Pittsburgh, Chartiers, & Youghiogheny	Pennsylvania	77,066	77,066
Pittsburgh & West Virginia	Ohio	677,287	1,859,858
	Pennsylvania	1,031,191	
	West Virginia	151,380	

See footnote at end of table.

TABLE 16. - BITUMINOUS COAL AND LIGNITE LOADED FOR SHIPMENT BY RAILROADS AND WATERWAYS IN THE UNITED STATES, AS REPORTED BY MINE OPERATORS, IN NET TONS, IN 1946 1/ - Continued

Route	State	Quantity	
		By State	Total for route
RAILROADS - Continued			
Preston	West Virginia	93,208	93,208
Rio Grande Southern	Colorado	8,622	8,622
Rockdale, Sandow, & Southern	Texas (lignite)	55,604	55,604
St. Louis & O'Fallon	Illinois	373,211	373,211
St. Louis-San Francisco	Alabama	1,780,257	4,457,523
	Arkansas	214,821	
	Kansas	633,555	
	Missouri	423,516	
	Oklahoma	1,405,374	
Seaboard Air Line	Alabama	88,999	88,999
Southern	Alabama	3,008,191	8,988,888
	Illinois	149,762	
	Indiana	1,711,296	
	Kentucky	1,079,251	
	Tennessee	2,274,845	
	Virginia	765,543	
Southern Pacific	New Mexico	339,716	347,616
	Oregon	7,900	
Springfield Terminal	Illinois	717,351	717,351
Tennessee	Tennessee	979,292	979,292
Tennessee Central	Tennessee	317,202	317,202
Tennessee Coal, Iron & Railroad Co.	Alabama	2,572,987	2,572,987
Thomas & Sayreton	Alabama	365,324	365,324
Union	Pennsylvania	220,501	220,501
Union Pacific	Colorado	766,430	6,676,334
	Utah	8,072	
	Washington	43,805	
	Wyoming	5,858,027	
Unity	Pennsylvania	533,770	533,770
Utah	Utah	1,741,570	1,741,570
Virginian	Virginia	166,793	11,713,425
	West Virginia	11,546,632	
Wabash	Illinois	2,445,324	3,065,465
	Iowa	184,769	
	Missouri	435,372	
West Virginia Northern	West Virginia	832,281	832,281
Western Allegheny	Pennsylvania	448,219	448,219
Western Maryland	Maryland	925,031	6,020,416
	Pennsylvania	335,282	
	West Virginia	4,760,103	
Wheeling and Lake Erie	Ohio	5,729,313	5,729,313
Winifrede	West Virginia	183,562	183,562
Woodward Iron Company	Alabama	859,006	859,006
Youngstown and Suburban	Ohio	2,571	2,571
Total railroad shipments	....	450,615,524	450,615,524

See footnote at end of table.

TABLE 16. - BITUMINOUS COAL AND LIGNITE LOADED FOR SHIPMENT BY RAILROADS AND WATERWAYS IN THE UNITED STATES, AS REPORTED BY MINE OPERATORS, IN NET TONS, IN 1946 1/ - Continued

Route	State	Quantity	
		By State	Total for route
WATERWAYS			
Allegheny River	Pennsylvania	880,022	880,022
Black Warrior River	Alabama	56,707	56,707
Emory River	Tennessee	3,142	3,142
Illinois River	Illinois	530,700	530,700
Kanawha River	West Virginia	1,501,335	1,501,335
Monongahela River	Pennsylvania	19,743,932	20,575,402
	West Virginia	831,470	
Ohio River	Kentucky	351,914	1,066,804
	Ohio	76,717	
	Pennsylvania	4,528	
	West Virginia	633,645	
Tennessee River	Tennessee	27,421	27,421
Total waterway shipments		24,641,533	24,641,533
Total loaded at mines for shipment by railroads and waterways		475,257,057	475,257,057
Shipped by truck or wagon		42,730,884	42,730,884
Taken by locomotive tender at tipple		731,748	731,748
Shipped by conveyor or tram to point of consumption		5,700,870	5,700,870
Coal used by employees		2,464,300	2,464,300
Used at mine for power and heat		1,950,645	1,950,645
Made into beehive coke at mine		5,086,564	5,086,564
Total production		533,922,068	533,922,068

1/ Includes coal loaded at mine directly into railroad cars or river barges, hauled by truck to railroad siding for shipment by rail, and hauled by truck to waterway for shipment by water. In general, the figures show the quantity of bituminous coal and lignite originated for each railroad and waterway as reported by the mine operators. It must be noted that in one year an operator may report coal loaded on the subsidiary railroad and in another year the same operator may report coal loaded on the parent railroad system.

METHOD OF RECOVERY

TABLE 17.- BITUMINOUS COAL AND LIGNITE MINED BY DIFFERENT METHODS IN THE UNITED STATES, BY STATES, IN 1946

State	From underground workings							From strip pits		Grand total production (net tons)
	Mined by hand		Shot from the solid		Cut by machines		Total underground (net tons)			
	Net tons	Percent of total underground	Net tons	Percent of total underground	Net tons	Percent of total underground		Net tons	Percent of grand total	
Alabama	155,750	1.1	3,234,667	22.5	10,977,735	76.4	14,368,152	1,815,146	11.2	16,183,298
Alaska	—	—	280,173	100.0	—	—	280,173	86,636	23.6	366,809
Arizona	—	—	6,414	100.0	—	—	6,414	—	—	6,414
Arkansas	42,705	4.0	73,020	6.8	952,507	89.2	1,068,232	563,242	34.5	1,631,474
Colorado	774,586	13.5	191,126	3.3	4,792,773	83.2	5,758,485	155,023	2.6	5,913,508
Georgia	—	—	24,798	100.0	—	—	24,798	88,965	78.2	113,763
Illinois	204,764	.4	1,886,365	3.9	46,215,638	95.7	48,306,767	15,161,818	23.9	63,468,585
Indiana	49,667	.5	150,546	1.5	9,670,379	98.0	9,870,592	11,826,355	54.5	21,696,947
Iowa	60,109	5.2	521,434	45.1	575,757	49.7	1,157,300	630,833	35.3	1,788,133
Kansas	49,583	23.5	35,071	16.7	126,010	59.8	210,664	2,282,721	91.6	2,493,385
Kentucky	487,741	.8	8,758,479	14.8	49,952,393	84.4	59,198,613	7,354,364	11.1	66,552,977
Maryland	825,392	57.1	—	—	619,423	42.9	1,444,815	557,730	27.9	2,002,545
Michigan	—	—	—	—	79,990	100.0	79,990	—	—	79,990
Missouri	28,373	7.3	24,007	6.1	339,514	86.6	391,894	3,340,921	89.5	3,732,815
Montana (bituminous)	—	—	10,324	.8	1,219,836	99.2	1,230,160	2,452,753	66.6	3,682,913
Montana (lignite)	—	—	38,934	100.0	—	—	38,934	1,079	2.7	40,013
New Mexico	71,868	5.6	187,070	14.6	1,021,341	79.8	1,280,279	—	—	1,280,279
North Dakota (lignite)	—	—	33,875	7.9	393,231	92.1	427,106	2,127,576	83.3	2,554,682
Ohio	87,104	.5	30,015	.2	17,990,204	99.3	18,107,323	14,206,939	44.0	32,314,262
Oklahoma	3,098	.3	64,276	6.6	907,512	93.1	974,886	1,672,494	63.2	2,647,380
Oregon	1,064	6.2	200	1.2	15,889	92.6	17,153	—	—	17,153
Pennsylvania	8,909,306	9.5	2,582,813	2.8	82,317,930	87.7	93,810,049	31,686,807	25.2	125,496,856
South Dakota (lignite)	—	—	—	—	—	—	—	16,946	100.0	16,946
Tennessee	281,037	5.2	566,001	10.4	4,575,107	84.4	5,422,145	196,207	3.5	5,618,352
Texas (lignite)	—	—	—	—	—	—	—	55,978	100.0	55,978
Utah	6,708	.1	259,242	4.3	5,728,063	95.6	5,994,013	—	—	5,994,013
Virginia	133,592	.9	1,010,925	6.8	13,726,562	92.3	14,871,079	655,816	4.2	15,526,895
Washington	91,084	10.2	387,390	43.3	415,097	46.5	893,571	97,556	9.8	991,127
West Virginia	2,909,768	2.2	3,053,093	2.4	123,120,104	95.4	129,082,965	14,937,127	10.4	144,020,092
Wyoming	104,089	1.6	137,165	2.0	6,400,545	96.4	6,641,799	992,685	13.0	7,634,484
Total	15,277,388	3.6	23,547,423	5.6	382,133,540	90.8	420,958,351	112,963,717	21.1	533,922,068

TABLE 18. - NUMBER OF COAL-CUTTING MACHINES IN BITUMINOUS-COAL AND LIGNITE MINES, AVERAGE OUTPUT PER MACHINE, AND PERCENTAGE OF TOTAL PRODUCT OF UNDERGROUND MINES CUT BY MACHINE IN THE UNITED STATES, BY STATES, IN 1945 and 1946

State	1945					1946				
	Number of coal-cutting machines in use			Average output per machine (net tons)	Percent of total product of underground mines cut by machine	Number of coal-cutting machines in use			Average output per machine (net tons)	Percent of total product of underground mines cut by machine
	Permissible	Other	Total			Permissible	Other	Total		
Alabama	291	350	641	19,482	76.4	259	365	624	17,593	76.4
Arkansas	26	52	78	13,532	89.3	21	55	76	12,533	89.2
Colorado	202	313	515	12,039	81.9	192	325	517	9,270	83.2
Illinois	289	512	801	66,614	95.1	272	551	823	56,157	95.7
Indiana	95	144	239	47,866	97.6	62	154	216	44,770	98.0
Iowa	33	46	79	11,568	59.9	35	21	56	10,281	49.7
Kansas	8	12	20	9,984	73.1	8	11	19	6,632	59.8
Kentucky	572	1,178	1,750	31,071	86.4	552	1,299	1,851	26,987	84.4
Maryland	21	27	48	12,186	37.9	19	30	49	12,641	42.9
Michigan	—	18	18	6,984	100.0	—	19	19	4,210	100.0
Missouri	28	30	58	6,888	81.5	20	40	60	5,659	86.6
Montana (bituminous)	7	50	57	32,631	99.5	12	45	57	21,401	99.2
New Mexico	41	36	77	14,549	75.6	52	12	64	15,958	79.8
North Dakota (lignite) ..	13	3	16	38,971	94.1	2	5	7	56,176	92.1
Ohio	262	523	785	24,316	99.1	267	527	794	22,658	99.3
Oklahoma	70	58	128	9,162	91.6	37	48	85	10,677	93.1
Oregon	2	—	2	8,150	98.8	2	—	2	7,945	92.6
Pennsylvania	2,304	1,096	3,400	26,885	86.8	2,386	1,018	3,404	24,183	87.7
Tennessee	23	221	244	19,078	76.8	16	255	271	16,882	84.4
Utah	165	59	224	29,460	98.8	166	65	231	24,797	95.6
Virginia	123	245	368	42,764	93.0	95	285	380	36,123	92.3
Washington	58	—	58	9,894	47.6	57	—	57	7,282	46.5
West Virginia	1,187	2,270	3,457	38,184	95.8	1,351	2,266	3,617	34,039	95.4
Wyoming	15	312	327	26,700	97.1	25	321	346	18,499	96.4
Total	5,835	7,555	13,390	31,720	90.8	5,908	7,717	13,625	28,046	90.8

TABLE 19. – STRIPPING OPERATIONS OF ALL TYPES IN THE BITUMINOUS-COAL AND LIGNITE FIELDS OF THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 1/

State and county	Number of strip pits	Number of power shovels and dragline excavators				Mined by stripping (net tons)	Average number of employees			Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Steam	Electric	Diesel	Gasoline		In strip pits	All others	Total			
Alabama:												
Bibb	4	---	---	1	2	111,170	83	17	100	84	8,426	13.19
Blount and Marion	4	4	---	3	---	73,511	69	14	83	221	18,335	4.01
Jefferson	7	1	---	6	5	442,672	210	51	261	194	50,614	8.75
St. Clair	4	---	---	4	2	199,725	135	22	157	153	24,023	8.31
Tuscaloosa	4	---	---	6	---	189,209	60	17	77	221	16,981	11.14
Walker	20	1	2	23	3	798,859	347	118	465	156	72,554	11.01
Total Alabama	43	6	2	43	12	1,815,146	904	239	1,143	167	190,933	9.51
Alaska	2	---	---	2	---	86,636	20	6	26	291	7,554	11.47
Arkansas:												
Franklin	2	2	---	---	1	19,627	20	5	25	129	3,225	6.09
Johnson	4	---	1	4	1	169,143	49	35	84	207	17,418	9.71
Pope	1	---	---	1	---	44,405	42	10	52	97	5,020	8.85
Scott	2	1	---	4	---	153,345	49	34	83	181	15,011	10.22
Sebastian	11	2	---	11	9	176,722	161	55	216	107	23,198	7.62
Total Arkansas	20	5	1	20	11	563,242	321	139	460	139	63,872	8.82
Colorado:												
Jackson	2	---	---	---	2	35,564	16	3	19	214	4,073	8.73
Routt	2	---	1	---	1	119,459	38	16	54	181	9,754	12.25
Total Colorado	4	---	1	---	3	155,023	54	19	73	189	13,827	11.21
Georgia: Walker	1	---	---	2	---	88,965	40	13	53	273	14,472	6.15
Illinois:												
Brown	1	---	---	---	---	1,570	2	---	2	132	264	5.95
Bureau, LaSalle, and Schuyler	4	---	3	5	---	297,216	56	64	120	209	25,073	11.85
Fulton	10	---	23	7	3	5,600,965	555	663	1,218	222	270,615	20.70
Grundy	3	---	12	2	4	1,408,256	263	236	499	255	127,300	11.06
Henry	1	---	3	---	---	412,575	47	105	152	256	38,978	10.58
Jackson	1	---	4	---	---	493,527	77	30	107	242	25,893	19.06
Knox	1	---	3	1	---	656,263	52	51	103	253	26,104	25.14
Livingston	1	---	---	---	2	6,189	4	1	5	154	770	8.04
Perry	3	---	10	1	1	2,493,105	246	395	641	234	149,924	16.63
Randolph	1	---	1	1	---	929,306	57	54	111	245	27,195	34.17
St. Clair	3	---	4	3	3	1,018,784	99	75	174	272	47,407	21.49
Saline	3	---	4	7	---	687,847	155	124	279	234	65,417	10.51
Vermilion	2	---	---	1	1	48,306	21	2	23	136	3,137	15.40
Will	2	---	2	1	---	213,746	47	29	76	187	14,190	15.06
Williamson	10	---	5	4	5	894,163	197	109	306	126	38,548	23.20
Total Illinois	46	---	74	33	19	15,161,818	1,878	1,938	3,816	226	860,815	17.61

See footnote at end of table.

TABLE 19. - STRIPPING OPERATIONS OF ALL TYPES IN THE BITUMINOUS-COAL AND LIGNITE FIELDS OF THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 1/ - Continued

State and county	Number of strip pits	Number of power shovels and dragline excavators				Mined by stripping (net tons)	Average number of employees			Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Steam	Electric	Diesel	Gasoline		In strip pits	All others	Total			
Indiana:												
Clay	14	2	10	20	11	1,864,143	418	278	696	196	136,137	13.69
Daviess and Fountain	2	---	---	1	3	97,656	27	10	37	223	8,237	11.86
Greene	4	1	2	2	3	617,266	70	57	127	176	22,387	27.57
Knox	1	---	2	2	---	685,522	74	75	149	248	36,910	18.57
Owen	2	---	---	1	3	14,731	9	2	11	134	1,469	10.03
Pike	8	1	14	6	6	3,438,660	478	403	881	224	197,669	17.40
Spencer	3	---	---	3	3	208,551	54	33	87	180	15,702	13.28
Sullivan	4	---	11	4	---	1,525,375	250	244	494	210	103,773	14.70
Vermillion	2	---	3	1	1	198,773	89	72	161	121	19,427	10.23
Vigo	5	---	2	2	4	558,382	106	48	154	173	26,671	20.94
Warrick	5	---	9	8	1	2,617,296	401	273	674	236	158,772	16.48
Total Indiana	50	4	53	50	35	11,826,355	1,976	1,495	3,471	209	727,154	16.26
Iowa:												
Davis	1	---	---	2	1	4,730	10	2	12	204	2,442	1.94
Mahaska	10	2	1	8	9	236,295	93	49	142	219	31,156	7.58
Marion	8	---	---	4	9	291,623	70	32	102	209	21,340	13.67
Van Buren and Wapello	4	---	---	3	6	98,185	29	14	43	217	9,339	10.51
Total Iowa	23	2	1	17	25	630,833	202	97	299	215	64,277	9.81
Kansas:												
Bourbon	4	1	2	---	1	162,838	45	30	75	174	13,080	12.45
Cherokee	10	2	6	2	5	877,219	147	149	296	221	65,323	13.43
Crawford	10	7	12	---	5	1,230,366	290	148	438	207	90,503	13.59
Labette, Linn, and Osage	6	---	---	---	1	12,298	25	9	34	124	4,228	2.91
Total Kansas	30	10	20	2	12	2,282,721	507	336	843	205	173,134	13.18
Kentucky:												
Boyd	5	---	---	9	1	404,306	76	25	101	259	26,198	15.43
Butler and Daviess	3	---	---	---	2	18,020	14	3	17	134	2,280	7.90
Clay	2	---	---	4	---	51,750	53	11	64	163	10,445	4.95
Elliott, Pulaski, Rockcastle, and Whitley	6	2	---	---	1	29,928	39	8	47	108	5,094	5.88
Hancock	2	---	---	2	2	36,246	25	10	35	93	3,240	11.19
Hopkins	17	1	11	20	20	4,588,543	616	345	961	236	226,638	20.25
Laurel	4	---	---	5	---	159,126	54	12	66	200	13,228	12.03
Letcher	3	---	---	4	---	37,967	32	7	39	80	3,129	12.13
Muhlenberg	5	2	1	11	4	816,350	170	69	239	197	47,105	17.33
Ohio	3	---	---	6	3	346,093	67	54	121	161	19,458	17.79
Perry and Pike	4	---	1	13	---	761,114	122	33	155	231	35,851	21.23
Webster	2	---	---	1	3	104,921	46	12	58	101	5,836	17.98
Total Kentucky	56	5	13	75	36	7,354,364	1,314	589	1,903	209	398,502	18.46

See footnote at end of table.

TABLE 19. - STRIPPING OPERATIONS OF ALL TYPES IN THE BITUMINOUS-COAL AND LIGNITE FIELDS OF THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 1/ - Continued

State and county	Number of strip pits	Number of power shovels and dragline excavators				Mined by stripping (net tons)	Average number of employees			Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Steam	Electric	Diesel	Gasoline		In strip pits	All others	Total			
Maryland:												
Allegany	15	—	—	9	10	351,196	256	79	335	112	37,508	9.36
Garrett	8	1	—	6	5	206,534	82	32	114	170	19,422	10.63
Total Maryland	23	1	—	15	15	557,730	338	111	449	127	56,930	9.80
Missouri:												
Barton	4	—	4	—	2	166,857	48	23	71	178	12,626	13.22
Bates	2	2	4	1	—	1,003,322	99	100	199	253	50,279	19.96
Boone	1	—	—	2	—	45,586	12	2	14	268	3,748	12.16
Callaway and Johnson	3	—	—	4	2	209,860	53	39	92	304	27,927	7.51
Dade	3	—	—	—	1	8,102	8	3	11	270	2,970	2.73
Henry	4	—	7	1	1	677,091	92	47	139	254	35,263	19.20
Jasper	1	1	—	—	—	3,426	4	1	5	205	1,025	3.34
Macon	1	—	2	1	1	464,207	86	59	145	241	34,888	13.31
Monroe	2	—	—	—	1	6,152	10	1	11	259	2,854	2.16
Randolph	2	—	2	—	—	430,421	33	53	86	281	24,155	17.82
Vernon	6	1	5	2	1	325,897	82	35	117	229	26,762	12.18
Total Missouri	29	4	24	11	9	3,340,921	527	363	890	250	222,497	15.02
Montana:												
McCone (lignite)	1	—	—	—	1	1,079	4	—	4	64	256	4.21
Rosebud (bituminous)	1	—	7	1	—	2,452,753	98	51	149	298	44,411	55.23
Total Montana	2	—	7	1	1	2,453,832	102	51	153	292	44,667	54.94
North Dakota: Lignite	28	4	14	7	20	2,127,576	255	210	465	232	107,668	19.76
Ohio:												
Athens	7	1	—	13	2	388,486	96	70	166	150	24,892	15.61
Belmont	14	—	—	21	11	1,217,073	220	117	337	199	67,095	18.14
Carroll	3	—	—	10	1	297,175	54	18	72	296	21,330	13.93
Columbiana	15	—	—	20	6	558,972	135	49	184	229	42,131	13.27
Coshocton	8	1	—	5	7	133,315	61	28	89	142	12,621	10.56
Guernsey, Portage, and Wayne	5	—	—	11	—	277,233	87	24	111	166	18,395	15.07
Harrison	14	—	13	31	4	4,641,609	648	513	1,161	236	274,255	16.92
Hocking	7	—	—	11	6	367,648	94	35	129	195	25,217	14.58
Holmes	1	—	—	2	2	105,957	14	20	34	276	9,384	11.29
Jackson	10	—	—	4	7	65,576	38	10	48	161	7,728	8.49
Jefferson	24	2	3	33	12	2,511,293	420	204	624	202	126,103	19.91
Mahoning	4	1	—	3	1	143,516	43	10	53	202	10,714	13.40
Meigs	2	—	—	—	2	26,807	14	4	18	99	1,774	15.11
Morgan	3	—	—	—	6	41,122	33	17	50	67	3,348	12.28
Muskingum	7	1	2	4	4	792,395	122	26	148	200	29,575	26.79
Noble	4	—	—	5	3	287,675	48	17	65	184	11,937	24.10
Perry	32	—	2	41	10	1,078,214	419	152	571	140	79,828	13.51
Stark	9	2	—	3	14	242,389	75	29	104	216	22,481	10.78
Tuscarawas	19	4	2	17	16	889,151	197	87	284	255	72,440	12.27
Vinton	9	—	—	11	4	141,333	106	26	132	141	18,662	7.57
Total Ohio	197	12	22	245	118	14,206,939	2,924	1,456	4,380	201	879,910	16.15

See footnote at end of table.

TABLE 19. - STRIPPING OPERATIONS OF ALL TYPES IN THE BITUMINOUS-COAL AND LIGNITE FIELDS OF THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 1/ - Continued

State and county	Number of strip pits	Number of power shovels and dragline excavators				Mined by stripping (net tons)	Average number of employees			Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Steam	Electric	Diesel	Gasoline		In strip pits	All others	Total			
Oklahoma:												
Coal	3	—	1	4	1	228,674	59	40	99	230	22,739	10.06
Craig	4	1	—	2	1	10,784	13	4	17	192	3,266	3.30
Haskell	3	1	—	—	3	36,108	34	16	50	102	5,086	7.10
Latimer, Pittsburg, and Tulsa	3	1	2	3	2	161,029	57	31	88	211	18,574	8.67
Muskogee	2	2	—	1	—	152,198	54	15	69	270	18,624	8.17
Okmulgee	1	—	—	1	2	176,356	28	12	40	313	12,532	14.07
Rogers	3	5	4	1	—	494,520	107	63	170	287	48,721	10.15
Wagoner	3	—	5	1	1	412,825	76	80	156	192	30,028	13.75
Total Oklahoma	22	10	12	13	10	1,672,494	428	261	689	232	159,570	10.48
Pennsylvania:												
Allegheny	59	2	—	78	43	4,549,726	991	392	1,383	189	261,801	17.38
Armstrong	25	—	—	42	12	1,400,418	394	141	535	176	93,942	14.91
Beaver	8	1	—	11	7	138,967	75	21	96	134	12,843	10.82
Bedford	3	1	—	9	—	229,629	82	36	118	177	20,860	11.01
Blair and Lycoming	3	—	—	4	2	95,771	36	14	50	174	8,722	10.98
Butler	30	4	—	28	23	1,060,885	379	111	490	169	82,990	12.78
Cambria	40	1	—	52	1	1,319,345	474	155	629	135	85,176	15.49
Centre	21	2	—	23	18	912,382	314	90	404	197	79,430	11.49
Clarion	26	—	—	46	9	2,049,036	536	206	742	206	152,662	13.42
Clearfield	102	12	—	125	31	3,875,309	1,537	435	1,972	178	350,551	11.05
Clinton	3	1	—	3	2	185,553	65	14	79	149	11,748	15.79
Elk	9	1	—	8	1	139,069	98	19	117	109	12,696	10.95
Fayette	59	3	—	23	53	1,738,134	592	152	744	143	106,080	16.39
Greene	12	—	—	4	14	534,386	183	47	230	158	36,344	14.70
Huntingdon	6	—	—	9	4	374,783	158	29	187	184	34,374	10.90
Indiana	35	—	2	70	12	2,233,319	601	203	804	190	152,629	14.63
Jefferson	38	2	—	43	9	1,279,709	446	126	572	174	99,764	12.83
Lawrence	6	—	—	4	7	112,338	41	14	55	179	9,820	11.44
McKean	2	—	—	3	—	40,938	15	7	22	164	3,600	11.37
Mercer	7	—	—	13	1	322,521	102	28	130	184	23,942	13.47
Somerset	37	—	4	44	18	1,645,961	473	174	647	148	95,919	17.16
Tioga	3	—	—	2	1	26,081	19	6	25	122	3,056	8.53
Venango	3	—	—	5	1	101,134	34	14	48	133	6,389	15.83
Washington	31	5	4	49	18	4,913,735	856	386	1,242	216	268,834	18.28
Westmoreland	72	4	—	56	30	2,407,678	823	247	1,070	129	138,103	17.43
Total Pennsylvania	640	39	10	754	317	31,686,807	9,324	3,067	12,391	174	2,152,275	14.72
South Dakota: Lignite	3	—	—	3	—	16,946	14	—	14	169	2,364	7.17
Tennessee:												
Anderson, Campbell, and Morgan	5	—	1	3	3	121,681	45	20	65	166	10,814	11.25
Bledsoe and Grundy	2	—	1	5	—	74,526	30	10	40	219	8,740	8.53
Total Tennessee	7	—	2	8	3	196,207	75	30	105	186	19,554	10.03
Texas: Lignite	1	2	—	1	—	55,978	10	15	25	248	6,200	9.03

See footnote at end of table.

TABLE 19. - STRIPPING OPERATIONS OF ALL TYPES IN THE BITUMINOUS-COAL AND LIGNITE FIELDS OF THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 1/ - Continued

State and county	Number of strip pits	Number of power shovels and dragline excavators				Mined by stripping (net tons)	Average number of employees			Average number of days mines were active	Number of man-days worked	Average tons per man per day
		Steam	Electric	Diesel	Gasoline		In strip pits	All others	Total			
Virginia:												
Buchanan	2	---	---	3	1	248,391	67	13	80	171	13,651	18.20
Russell	2	---	---	5	---	92,578	37	6	43	163	7,020	13.19
Wise	11	2	---	8	4	314,847	141	31	172	141	24,236	12.99
Total Virginia	15	2	---	16	5	655,816	245	50	295	152	44,907	14.60
Washington:												
King	4	---	---	2	4	41,683	28	9	37	133	4,922	8.47
Kittitas and Thurston	4	---	2	---	5	55,873	41	24	65	156	10,125	5.52
Total Washington	8	---	2	2	9	97,556	69	33	102	148	15,047	6.48
West Virginia:												
Barbour	18	---	---	17	7	912,014	259	106	365	160	58,420	15.61
Boone and Kanawha	3	---	1	3	1	175,526	41	16	57	175	9,963	17.62
Braxton, Lewis, and Webster	3	---	---	4	1	83,246	55	16	71	90	6,402	13.00
Brooke	9	---	---	13	9	868,597	184	58	242	209	50,553	17.18
Fayette	16	---	---	26	9	1,208,366	369	115	484	176	85,066	14.21
Gilmer	2	---	---	3	---	50,877	25	9	34	165	5,606	9.08
Grant	1	---	---	2	1	103,834	30	10	40	269	10,750	9.66
Greenbrier	6	1	---	8	6	347,385	141	33	174	156	27,123	12.81
Hancock and Marshall	3	1	---	3	3	137,871	40	11	51	193	9,832	14.02
Harrison	61	---	---	126	17	6,445,411	1,321	554	1,875	173	323,934	19.90
Marion	3	---	---	3	---	131,724	45	18	63	117	7,372	17.87
McDowell	2	---	---	1	---	48,157	25	5	30	105	3,164	15.22
Mineral	5	---	---	4	4	342,196	84	27	111	190	21,139	16.19
Mingo	3	---	---	5	1	272,985	63	37	100	218	21,790	12.53
Monongalia	11	---	---	17	8	662,213	189	61	250	154	38,600	17.16
Nicholas	4	---	---	8	1	314,158	75	25	100	243	24,264	12.95
Preston	4	2	---	7	1	637,847	131	74	205	257	52,660	12.11
Raleigh	6	---	---	3	7	145,107	76	16	92	115	10,547	13.76
Randolph	9	---	---	18	2	669,948	184	87	271	152	41,087	16.31
Taylor	9	---	---	15	---	601,066	149	44	193	135	26,053	23.07
Tucker	5	---	---	6	6	740,671	184	55	239	239	57,040	12.99
Upshur	3	---	---	2	3	37,928	23	8	31	96	2,987	12.70
Total West Virginia	186	4	1	294	87	14,937,127	3,693	1,385	5,078	176	894,352	16.70
Wyoming:												
Campbell	2	---	2	---	2	188,837	22	36	58	225	13,066	14.45
Carbon	3	1	---	3	2	307,517	74	37	111	177	19,641	15.66
Converse	2	---	---	---	1	11,380	5	1	6	228	1,370	8.31
Sheridan	2	---	---	2	1	484,951	87	34	121	229	27,744	17.48
Total Wyoming	9	1	2	5	6	992,685	188	108	296	209	61,821	16.06
Total United States	1,445	111	261	1,619	753	112,963,717	25,408	12,011	37,419	192	7,182,302	15.73

1/ On returns from mines combining stripping and underground methods in same operation, tonnage has been separated and figures on employment prorated so that this table includes only data pertaining to strip mining.

TABLE 20. - SUMMARY OF OPERATIONS OF UNDERGROUND BITUMINOUS-COAL AND LIGNITE MINES WHERE SHOT HOLES WERE POWER-DRILLED IN THE UNITED STATES, BY STATES, IN 1946

State	Number of mines using power drills	Number of power drills		Net tons produced in working places where shot holes were power-drilled			Total production from mines using power drills (net tons)
		Electric	Compressed air	Electric drills	Compressed air drills	Total	
Alabama	68	838	189	10,233,263	363,503	10,596,766	12,066,657
Alaska	3	12	27	115,550	164,623	280,173	280,173
Arkansas	21	26	38	275,238	67,214	342,452	926,805
Colorado	89	447	66	3,891,164	14,392	3,905,556	5,111,920
Illinois	130	1,142	34	42,685,775	5,744	42,691,519	46,011,494
Indiana	28	247	1	9,207,331	—	9,207,331	9,231,488
Iowa	16	49	—	351,973	—	351,973	449,078
Kentucky	307	1,339	177	37,400,410	636,868	38,037,278	42,920,418
Maryland	6	35	7	370,531	—	370,531	692,109
Michigan	3	8	1	62,956	—	62,956	79,990
Missouri	10	9	2	139,801	—	139,801	176,582
Montana: Bituminous	15	53	3	1,187,355	—	1,187,355	1,192,299
Lignite	5	14	—	35,270	—	35,270	35,270
New Mexico	6	35	6	964,268	—	964,268	1,017,130
North Dakota (lignite)	7	13	3	90,015	309,979	399,994	399,994
Ohio	76	471	6	13,411,150	2,251	13,413,401	14,669,728
Oklahoma	6	34	—	499,206	—	499,206	583,471
Oregon	1	—	5	—	16,089	16,089	16,089
Pennsylvania	292	2,121	583	51,217,950	552,825	51,770,775	74,286,538
Tennessee	39	198	55	3,195,990	79,990	3,275,980	4,194,138
Utah	39	295	28	5,902,353	—	5,902,353	5,936,283
Virginia	53	246	74	6,756,947	—	6,756,947	10,483,594
Washington	22	78	160	252,422	526,213	778,635	830,546
West Virginia	433	2,811	411	81,001,224	139,047	81,140,271	111,357,543
Wyoming	27	447	8	6,586,702	20,386	6,607,088	6,607,088
Total	1,702	10,968	1,884	275,834,844	2,899,124	278,733,968	349,556,425

MECHANICAL LOADING

Bituminous coal and lignite mechanically loaded in underground mines amounted to 245,340,768 tons in 1946, or 58 percent of the total underground output.

Mechanical loading equipment used in underground bituminous-coal and lignite mines is divided into two types: Devices that practically eliminate hand shoveling (known as mobile loaders, scrapers, and self-loading conveyors) and those that greatly reduce the labor in hand shoveling (known as hand-loaded face conveyors and pit-car loaders). Devices in the first category are designated as "machines" and those in the second category as "conveyors."

Sales of Mechanical Loading Equipment in 1946. - The estimated capacity of mechanical loading equipment sold for underground use in all coal mines was 20 percent more in 1946 than in 1945. Table 21 shows the sales reported to bituminous coal and lignite operators, by type of equipment, and the number of manufacturers reporting for 1939-46.

Sales of conveyors to bituminous-coal and lignite mines in 1946 totaled 838 units. The figures for 1942-46 exclude duckbills, which were included in all previous years. Therefore, these sales are not comparable with those for 1941 or earlier years.

The number of mobile loaders, scrapers, and conveyors shipped into various States and groups of States and the number of units in actual use in 1946 are shown in table 23.

Statistics on Mechanical Loading in Bituminous-Coal and Lignite Mines. - More than three-fourths of the underground mechanically loaded tonnage was handled by mobile loaders in 1946. Table 24 shows the tons and percent handled by each type of equipment in 1945 and 1946.

During 1946, in underground bituminous-coal and lignite mines 3,200 mobile loaders handled 186,974,813 tons, an average of 58,430 tons per mobile loader per year; self-loading conveyors averaged 12,938; scrapers, 12,223; hand-loaded face conveyors, 10,706; and pit-car loaders 6,692 per year per unit for the same period.

Mechanical Loading by States. - West Virginia has been the leading producer of mechanically loaded coal since 1939. During 1946 West Virginia produced 77,699,870 tons of mechanically loaded coal, followed by Pennsylvania with 42,836,165, Illinois with 42,353,054, Kentucky with 24,369,466, and Ohio with 12,578,225 tons. These five States produced more than 81 percent of the total output of underground mechanically loaded bituminous coal in the United States in 1946.

Detailed data, by States, on the number of mines and machines and the production of mechanically loaded coal compared with the total production at mines using mechanical loading devices are given in table 25. Comparative changes in underground mechanical loading in 1945-46, by States, are shown in table 26.

Table 27 shows bituminous-coal and lignite tonnage mined by stripping compared with underground hand-loaded and machine-loaded tonnage, also productivity at strip and underground mines, by States, for 1946.

TABLE 21. - UNITS OF MECHANICAL LOADING EQUIPMENT SOLD TO BITUMINOUS-COAL AND LIGNITE MINES FOR UNDERGROUND USE IN THE UNITED STATES, AS REPORTED BY MANUFACTURERS, 1939-46

	1939	1940	1941	1942	1943	1944	1945	1946	Change 1946 from 1945 (percent)
Type of equipment:									
Mobile loaders	292	233	367	352	234	282	349	490	+ 40.4
Scrapers 1/	18	36	8	15	13	20	6	3	- 50.0
Conveyors 2/...........	1,095	1,573	1,800	1,167	798	580	738	838	+ 13.6
Pit-car loaders	2	3	10	2	1	——	(3)	(3)	——
Total, all types..	1,407	1,845	2,185	1,536	1,046	882	1,093	1,331	+ 21.8
Number of manufacturers reporting	31	32	32	28	24	22	25	24	---

1/ Reported as scrapers or scraper haulers and hoists.

2/ Includes hand-loaded conveyors and those equipped with duckbills or other self-loading heads. Sales of both loading heads and shaker conveyors were counted for the years 1939-41, inclusive, but the figures for 1942-46, inclusive, do not include loading heads separately.

3/ Canvass of sales of pit-car loaders discontinued in 1945.

TABLE 22. - UNITS OF MECHANICAL LOADING EQUIPMENT IN USE IN UNDERGROUND BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, 1941-46

	1941	1942	1943	1944	1945	1946	Change 1946 from 1945 (percent)
Type of equipment:							
Mobile loaders	1,985	2,301	2,525	2,737	2,950	3,200	+ 8.5
Scrapers	109	93	83	87	87	75	- 13.8
Pit-car loaders	607	481	321	241	142	93	- 34.5
Conveyors equipped with duckbills or other self-loading heads	788	1,062	1,226	1,331	1,383	1,521	+ 10.0
Hand-loaded conveyors	2,807	3,041	3,191	3,236	3,385	3,470	+ 2.5
Total, all types	6,296	6,978	7,346	7,632	7,947	8,359	+ 5.2

TABLE 23. - COMPARISON OF MECHANICAL LOADING EQUIPMENT IN ACTUAL USE IN BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES WITH SALES REPORTED, BY STATES AND REGIONS, IN 1946

State and region	Mobile loaders		Scrapers		Conveyors 1/	
	In use	Sales	In use	Sales	In use	Sales
Northern Appalachian States:						
Maryland	1	---	---	---	43	5
Michigan	---	---	---	---	5	3
Ohio	162	22	---	---	166	35
Pennsylvania	693	90	17	---	893	123
Southern Appalachian States:						
Alabama	112	26	37	1	384	43
Kentucky	289	55	1	---	621	101
Tennessee	11	5	---	---	168	20
Virginia	83	11	---	---	158	24
West Virginia	903	216	---	1	1,564	377
Middle Western States:						
Illinois	582	23	---	---	30	9
Indiana	146	13	---	---	---	6
Trans-Mississippi States 2/	218	29	20	1	959	92
Total	3,200	490	75	3	4,991	838

1/ Includes hand-loaded conveyors and conveyors equipped with duckbills or other self-loading heads.
2/ Includes Arkansas, Colorado, Iowa, Montana, New Mexico, North Dakota, Oklahoma, Oregon, Utah, Washington, and Wyoming.

TABLE 24. - BITUMINOUS COAL AND LIGNITE MECHANICALLY LOADED UNDERGROUND IN THE UNITED STATES, BY TYPES OF LOADING EQUIPMENT, 1945-46

Type of equipment	1945		1946	
	Net tons	Percent of total	Net tons	Percent of total
Mobile loaders:				
Loading direct into mine cars	145,811,787	55.6	132,662,797	54.1
Loading onto conveyors	7,934,178	3.0	8,379,074	3.4
Loading into rubber-tired trucks	44,922,497	17.1	45,932,942	18.7
Scrapers	1,251,868	.5	916,759	.4
Pit-car loaders	985,817	.4	622,363	.3
Conveyors equipped with duckbills or other self-loading heads	21,505,950	8.2	19,678,478	8.0
Hand-loaded conveyors	40,100,632	15.2	37,148,355	15.1
Grand total loaded mechanically	262,512,729	100.0	245,340,768	100.0

TABLE 25. - MECHANICAL LOADING UNDERGROUND IN BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES, IN 1946

State	Number of mines				Number of loading devices					Production mechanically loaded (net tons)			Total underground production at mines using mechanical loading devices (net tons)			
	Using loading machines only 1/	Using conveyors only 2/	Using both loading machines and conveyors	Total	Mobile loading machines	Scrapers	Conveyors equipped with duckbills or other self-loading heads	Pit-car loaders	Hand-loaded conveyors 3/	Loaded by machines 1/	Handled by conveyors 2/	Total	Mines using loading machines only 1/	Mines using conveyors only 2/	Mines using both loading machines and conveyors	Total
Alabama	20	16	14	50	112	37	38	—	346	5,255,066	2,885,063	8,140,129	4,115,084	2,545,271	4,269,721	10,930,076
Arkansas	—	17	—	17	—	—	—	—	63	—	715,818	715,818	—	735,584	—	735,584
Colorado	40	15	5	60	30	1	202	1	81	2,990,267	398,002	3,388,269	3,557,732	423,793	187,237	4,168,762
Illinois	71	1	7	79	582	—	30	64	—	41,875,095	477,959	42,353,054	39,516,807	84,018	3,730,690	43,331,515
Indiana	19	—	1	20	146	—	—	2	—	8,889,172	25,000	8,914,172	8,800,756	—	113,416	8,914,172
Iowa	3	—	1	4	4	—	21	—	1	253,809	1,850	255,659	299,815	—	3,850	303,665
Kentucky	99	34	20	153	289	1	223	—	398	20,086,034	4,283,432	24,369,466	22,476,291	4,665,526	7,069,212	34,211,029
Maryland	—	3	1	4	1	—	3	—	40	27,703	283,643	311,346	—	363,603	190,230	553,833
Michigan	—	1	—	1	—	—	—	—	5	—	34,411	34,411	—	51,445	—	51,445
Montana (bituminous and lignite)	9	1	1	11	47	—	6	6	2	1,142,015	15,244	1,157,259	1,117,015	20,535	32,244	1,169,794
New Mexico	5	—	—	5	16	6	1	—	—	809,933	—	809,933	1,014,124	—	—	1,014,124
North Dakota (lig.)	2	—	—	2	6	—	—	—	—	354,379	—	354,379	390,386	—	—	390,386
Ohio	29	4	3	36	162	—	143	—	23	12,356,640	221,585	12,578,225	13,081,396	75,743	464,971	13,622,110
Oklahoma	—	7	1	8	4	—	—	—	55	130,000	440,602	570,602	—	431,956	179,942	611,898
Oregon	—	1	—	1	—	—	—	—	2	—	16,089	16,089	—	16,089	—	16,089
Pennsylvania	103	68	31	202	693	17	96	—	797	36,369,029	6,467,136	42,836,165	47,170,895	7,880,036	8,429,318	63,480,249
Tennessee	13	9	8	30	11	—	40	—	128	824,988	1,534,400	2,359,388	1,318,000	1,594,684	754,282	3,666,966
Utah	18	5	3	26	80	—	99	—	18	5,432,296	98,460	5,530,756	5,291,821	70,881	396,162	5,758,864
Virginia	19	11	7	37	83	—	36	—	122	4,295,140	1,638,479	5,933,619	4,975,934	2,067,436	2,954,350	9,997,720
Washington	1	4	5	10	1	5	4	—	91	59,415	413,582	472,997	19,415	122,485	369,920	511,820
West Virginia	183	114	84	381	903	—	313	19	1,251	60,288,895	17,410,975	77,699,870	61,984,763	17,468,472	24,516,481	103,969,716
Wyoming	20	2	3	25	30	8	266	1	47	6,130,174	408,988	6,539,162	6,043,029	151,661	363,207	6,557,897
Total: 1946 ..	654	313	195	1,162	3,200	75	1,521	93	3,470	207,570,050	37,770,718	245,340,768	221,173,263	38,769,218	54,025,233	313,967,714
1945 ..	592	328	196	1,116	2,950	87	1,383	142	3,385	221,426,280	41,086,449	262,512,729	235,653,793	45,579,058	60,527,040	341,759,891
Percent change, 1946 from 1945	+ 10.5	- 4.6	- 0.5	+ 4.1	+ 8.5	- 13.8	+ 10.0	- 34.5	+ 2.5	- 6.3	- 8.1	- 6.5	- 6.1	- 14.9	- 10.7	- 8.1

1/ Includes mobile loaders, scrapers, and conveyors equipped with duckbills or other self-loading heads. Some mines in this class also use conveyors or shuttle cars in conjunction with mobile loaders to perform initial phase of transportation.

2/ Includes hand-loaded conveyors and pit-car loaders.

3/ Number of units.

TABLE 26. - COMPARATIVE CHANGES IN UNDERGROUND MECHANICAL LOADING OF BITUMINOUS COAL AND LIGNITE BY PRINCIPAL TYPES OF LOADING DEVICES IN THE UNITED STATES, BY STATES, 1945-46

State	Net Tons						Handled by each class (percent)				Underground output mechanically loaded (percent)	
	1945			1946			1945		1946			
	Loaded by machines 1/	Handled by conveyors 2/	Total	Loaded by machines 1/	Handled by conveyors 2/	Total	Loaded by machines 1/	Handled by conveyors 2/	Loaded by machines 1/	Handled by conveyors 2/	1945	1946
Alabama	5,270,582	4,053,933	9,324,515	5,255,066	2,885,063	8,140,129	56.5	43.5	64.6	35.4	57.0	56.7
Arkansas	—	773,472	773,472	—	715,818	715,818	—	100.0	—	100.0	65.4	67.0
Colorado	3,488,332	809,687	4,298,019	2,990,267	398,002	3,388,269	81.2	18.8	88.3	11.7	56.8	58.8
Illinois	48,410,628	586,431	48,997,059	41,875,095	477,959	42,353,054	98.8	1.2	98.9	1.1	87.3	87.7
Indiana	10,541,050	36,177	10,577,227	8,889,172	25,000	8,914,172	99.7	.3	99.7	.3	90.3	90.3
Iowa	248,141	—	248,141	253,809	1,850	255,659	100.0	—	99.3	.7	16.3	22.1
Kentucky	20,429,297	4,344,086	24,773,383	20,086,034	4,283,432	24,369,466	82.5	17.5	82.4	17.6	39.4	41.2
Maryland	33,567	176,024	209,591	27,703	283,643	311,346	16.0	84.0	8.9	91.1	13.6	21.5
Michigan	—	53,656	53,656	—	34,411	34,411	—	100.0	—	100.0	42.7	43.0
Montana (bituminous and lignite)	1,774,152	20,000	1,794,152	1,142,015	15,244	1,157,259	98.9	1.1	98.7	1.3	93.9	91.2
New Mexico	761,484	3,861	765,345	809,933	—	809,933	99.5	.5	100.0	—	51.6	63.3
North Dakota (lig.)	543,351	—	543,351	354,379	—	354.379	100.0	—	100.0	—	82.0	83.0
Ohio	12,555,496	381,583	12,937,079	12,356,640	221,585	12,578,225	97.1	2.9	98.2	1.8	67.2	69.5
Oklahoma	125,000	723,908	848,908	130,000	440,602	570,602	14.7	85.3	22.8	77.2	66.3	58.5
Oregon	—	16,500	16,500	—	16,089	16,089	—	100.0	—	100.0	100.0	93.8
Pennsylvania	37,181,093	7,373,828	44,554,921	36,369,029	6,467,136	42,836,165	83.5	16.5	84.9	15.1	42.3	45.7
Tennessee	936,816	1,693,723	2,630,539	824,988	1,534,400	2,359,388	35.6	64.4	35.0	65.0	43.4	43.5
Utah	5,742,076	217,596	5,959,672	5,432,296	98,460	5,530,756	96.3	3.7	98.2	1.8	89.2	92.3
Virginia	4,104,531	1,198,432	5,302,963	4,295,140	1,638,479	5,933,619	77.4	22.6	72.4	27.6	31.3	39.9
Washington	103,393	599,237	702,630	59,415	413,582	472,997	14.7	85.3	12.6	87.4	58.3	52.9
West Virginia	60,838,348	17,519,919	78,358,267	60,288,895	17,410,975	77,699,870	77.6	22.4	77.6	22.4	56.9	60.2
Wyoming	8,338,943	504,396	8,843,339	6,130,174	408,988	6,539,162	94.3	5.7	93.7	6.3	98.3	98.5
Total	221,426,280	41,086,449	262,512,729	207,570,050	37,770,718	245,340,768	84.3	15.7	84.6	15.4	56.1	58.4

1/ Includes mobile loaders, scrapers, and conveyors equipped with duckbills or other self-loading heads.
2/ Includes hand-loaded conveyors and pit-car loaders.

TABLE 27. - BITUMINOUS COAL AND LIGNITE PRODUCTION BY METHODS OF MINING AND LOADING AND AVERAGE OUTPUT PER MAN PER DAY BY METHODS OF MINING IN THE UNITED STATES, BY STATES, IN 1946

State	Mined by stripping		Mined underground				Total	
	Net tons	Average tons per man per day	Hand-loaded (Net tons)	Mechanically loaded (Net tons)	Total (Net tons)	Average tons per man per day	Net tons	Average tons per man per day
Alabama	1,815,146	9.51	6,228,023	8,140,129	14,368,152	3.51	16,183,298	3.77
Alaska	86,636	11.47	280,173	-	280,173	3.92	366,809	4.64
Arizona	-	-	6,414	-	6,414	2.29	6,414	2.29
Arkansas	563,242	8.82	352,414	715,818	1,068,232	3.14	1,631,474	4.04
Colorado	155,023	11.21	2,370,216	3,388,269	5,758,485	5.10	5,913,508	5.18
Georgia	88,965	6.15	24,798	-	24,798	1.49	113,763	3.65
Illinois	15,161,818	17.61	5,953,713	42,353,054	48,306,767	7.83	63,468,585	9.03
Indiana	11,826,355	16.26	956,420	8,914,172	9,870,592	7.88	21,696,947	10.96
Iowa	630,833	9.81	901,641	255,659	1,157,300	3.52	1,788,133	4.55
Kansas	2,282,721	13.18	210,664	-	210,664	1.59	2,493,385	8.16
Kentucky	7,354,364	18.46	34,829,147	24,369,466	59,198,613	5.08	66,552,977	5.52
Maryland	557,730	9.80	1,133,469	311,346	1,444,815	4.25	2,002,545	5.05
Michigan	-	-	45,579	34,411	79,990	2.90	79,990	2.90
Missouri	3,340,921	15.02	391,894	-	391,894	2.38	3,732,815	9.64
Montana (bituminous)	2,452,753	55.23	80,923	1,149,237	1,230,160	6.39	3,682,913	15.55
Montana (lignite)	1,079	4.21	30,912	8,022	38,934	5.92	40,013	5.85
New Mexico	-	-	470,346	809,933	1,280,279	4.63	1,280,279	4.63
North Dakota (lignite)	2,127,576	19.76	72,727	354,379	427,106	7.81	2,554,682	15.73
Ohio	14,206,939	16.15	5,529,098	12,578,225	18,107,323	5.73	32,314,262	8.00
Oklahoma	1,672,494	10.48	404,284	570,602	974,886	3.97	2,647,380	6.53
Oregon	-	-	1,064	16,089	17,153	.81	17,153	.81
Pennsylvania	31,686,807	14.72	50,973,884	42,836,165	93,810,049	5.02	125,496,856	6.02
South Dakota (lignite)	16,946	7.17	-	-	-	-	16,946	7.17
Tennessee	196,207	10.03	3,062,757	2,359,388	5,422,145	4.16	5,618,352	4.24
Texas (lignite)	55,978	9.03	-	-	-	-	55,978	9.03
Utah	-	-	463,257	5,530,756	5,994,013	7.02	5,994,013	7.02
Virginia	655,816	14.60	8,937,460	5,933,619	14,871,079	4.65	15,526,895	4.79
Washington	97,556	6.48	420,574	472,997	893,571	3.26	991,127	3.42
West Virginia	14,937,127	16.70	51,383,095	77,699,870	129,082,965	5.70	144,020,092	6.12
Wyoming	992,685	16.06	102,637	6,539,162	6,641,799	7.29	7,634,484	7.85
Total	112,963,717	15.73	175,617,583	245,340,768	420,958,351	5.43	533,922,068	6.30

MECHANICAL CLEANING

The quantity of bituminous coal mechanically cleaned increased from about 28 million tons or 5.3 percent of the total output in 1927 to more than 138 million tons or 26 percent in 1946. (See table 13.)

Tables 28, 29, 32, and 33 include mechanical cleaning data on all coal mined in the United States except Pennsylvania anthracite. Tables 30 and 31 are on the same basis but do not include consumer-operated plants. There are no mechanical cleaning plants at lignite mines.

Mechanical cleaning by wet methods include jigs, concentrating tables, classifiers, launders, dense-media processes and any combinations of these 5 methods. Tables 29 and 30 show separate data on coal cleaned by classifiers, launders, and dense-media processes for the first time. Similar tables previously published have shown three types of cleaning grouped under the caption "Launders and upward-current classifiers."

Pneumatic methods of coal cleaning include air tables, air flow, air sand, and any combination of these three methods.

Consumer-operated plants include plants owned by steel companies which receive coal from various mines (but usually from affiliated companies), clean it, and then consume it directly at the plant.

Table 28 compares bituminous coal cleaned in 1943-46 by method of cleaning. Both wet and pneumatic methods decreased in 1946 from 1945.

Mechanical cleaning by types of equipment. - The tonnage of bituminous coal cleaned by wet-washing methods was 122,058,639 tons in 1946 - a decrease of 6.4 percent from 1945. The quantity cleaned by pneumatic methods was 16,611,198 tons - a decrease of 4.6 percent.

Table 29 compares the number of cleaning plants and the net tons of cleaned coal, by types of equipment, for 1945 and 1946. During 1946, 416 wet-washing and 88 pneumatic cleaning plants were in operation. Fifty-nine tipples used both wet and dry methods at the same plant; deducting these duplications gives a net total of 445 plants that cleaned coal in 1946, an increase of 6 plants over 1945.

Mines served by cleaning plants, exclusive of those that ship to washeries operated by steel companies, produced a total of 200,273,922 tons, or 37.5 percent, of the total bituminous output in 1946. In this same group of mines, 131,731,490 tons were mechanically cleaned; therefore, 66 percent of the coal produced at mines with cleaning plants in 1946 was cleaned at the mine. The remainder of the output from these mines (34 percent) presumably represents the larger sizes commonly picked by hand. (See tables 31 and 33.)

Relation between raw coal, clean coal, and refuse. - For every 100 tons of raw coal cleaned during 1946 at the mines, 84.5 tons of clean merchantable coal, on an average, were obtained, and 15.5 tons of refuse were discarded. Table 33 shows total production of mines with cleaning plants and results of cleaning operations, by States.

Methods of mining at mines served by cleaning plants. - Underground mechanical loading appears to be closely related to mechanical cleaning. Underground coal loaded mechanically in 1946 totaled 245,340,768 tons, of which 125,521,189 tons (51 percent) passed through tipples equipped with mechanical-cleaning devices. Production of coal from strip mines in 1946 was 112,963,717 tons, of which 33,321,819 tons (29.5 percent) came from strip mines having mechanical cleaning tipples. Hand-loaded underground coal production in 1946 totaled 175,617,583 tons, of which 24 percent passed through tipples equipped with cleaning plants. (See tables 27 and 31.)

TABLE 28. - BITUMINOUS COAL MECHANICALLY CLEANED BY WET AND PNEUMATIC METHODS, IN THE UNITED STATES, IN NET TONS OF CLEAN COAL, 1943-46

Method of cleaning	1943	1944	1945	1946	Change 1946 from 1945 (percent)
By wet methods:					
At mines	114,407,591	128,390,547	121,418,585	115,120,292	- 5.2
At consumer-operated cleaning plants	9,967,184	10,272,142	9,051,154	6,938,347	-23.3
Total wet methods	124,374,775	138,662,689	130,469,739	122,058,639	- 6.4
By pneumatic methods	21,201,074	20,064,440	17,416,197	16,611,198	- 4.6
Grand total	145,575,849	158,727,129	147,885,936	138,669,837	- 6.2

TABLE 29. - BITUMINOUS COAL CLEANED IN THE UNITED STATES, BY TYPES OF EQUIPMENT IN ACTUAL OPERATION, 1945-46

(Coal cleaned and plants operated by consumers at central washeries in Colorado and Pennsylvania are included)

Type of equipment	Plants in operation		Net tons of clean coal		Cleaned by each type (percent of total)	
	1945	1946	1945	1946	1945	1946
Wet methods:						
1. Jigs	219	226	68,608,875	64,702,238	46.4	46.7
2. Concentrating tables	13	10	2,594,085	1,447,200	1.8	1.0
3. Classifiers	72	68	14,203,306	13,883,088	9.6	10.0
4. Launders	19	18	18,980,003	16,020,328	12.8	11.6
5. Dense-Media	55	59	12,874,598	14,172,428	8.7	10.2
6. Jigs and concentrating tables	16	14	4,754,311	3,776,190	3.2	2.7
7. Other combinations of methods 1,2,3,4, & 5	18	21	8,454,561	8,057,167	5.7	5.8
Total wet methods	412	416	130,469,739	122,058,639	88.2	88.0
8. Pneumatic methods	83	88	17,416,197	16,611,198	11.8	12.0
Grand total	1/ 495	1/ 504	147,885,936	138,669,837	100.0	100.0

1/ Number of plants using both wet and pneumatic methods was 56 in 1945 and 59 in 1946.

TABLE 30. - TOTAL PRODUCTION OF ALL COAL AT BITUMINOUS MINES IN THE UNITED STATES HAVING CLEANING PLANTS, IN NET TONS, 1945-46

(Does not include any estimate for mines that may ship to consumer-operated plants)

Type of equipment	1945	1946	Change 1946 from 1945 (percent)
Wet methods:			
1. Jigs	104,445,160	98,228,966	- 6.0
2. Concentrating tables	2,018,364	884,813	-56.2
3. Classifiers	31,704,616	29,727,885	- 6.2
4. Launders	16,803,513	14,978,052	-10.9
5. Dense-Media	31,059,519	29,329,451	- 5.6
6. Jigs and concentrating tables	5,039,409	4,137,840	-17.9
7. Other combinations of methods 1,2,3,4, & 5	12,394,420	12,566,806	+ 1.4
Total wet methods	203,465,001	189,853,813	- 6.7
8. Pneumatic methods	47,386,413	52,939,443	+11.7
Grand total	250,851,414	242,793,256	- 3.2
Less duplications 1/	36,593,344	42,519,334	+16.2
Net total	214,258,070	200,273,922	- 6.5
United States, total production 2/	577,617,327	533,922,068	- 7.6
Percent produced at mines having cleaning plants	37.1	37.5	—

1/ Mines using both wet and pneumatic methods.

2/ For purposes of historical comparison and statistical convenience, the figures include the output of lignite and of anthracite and semianthracite outside of Pennsylvania. There are no mechanical cleaning plants at lignite mines.

TABLE 31. - METHOD OF MINING AT BITUMINOUS-COAL MINES IN THE UNITED STATES SERVED BY CLEANING PLANTS, 1943-46

(Does not include any estimate for mines that may ship to consumer-operated plants)

Method of mining in use	Total net tons produced from mines that move coal to cleaning plants				Change 1946 from 1945 (percent)
	1943	1944	1945	1946	
Mined from strip pits	30,326,426	32,444,227	35,910,050	33,221,819	- 7.5
Mechanically loaded underground	125,313,683	137,926,900	129,733,226	125,521,189	- 3.2
Hand-loaded underground	67,258,305	62,564,653	48,614,794	41,530,914	- 14.6
Total	222,898,414	232,935,780	214,258,070	200,273,922	- 6.5

TABLE 32. - BITUMINOUS COAL MECHANICALLY CLEANED BY WET AND PNEUMATIC METHODS IN THE UNITED STATES, BY STATES, 1945-46

(Coal cleaned and plants operated by consumers at central washeries in Colorado and Pennsylvania are included)

State	Plants in operation		Net tons of clean coal		Output mechanically cleaned (percent)	
	1945	1946	1945	1946	1945	1946
Alabama	53	51	13,831,185	11,608,231	75.8	71.7
Alaska	2	2	158,800	164,623	53.4	44.9
Arkansas	3	3	71,951	98,177	3.9	6.0
Colorado	7	10	1,135,679	901,069	15.0	15.2
Illinois	55	57	30,710,862	28,164,779	42.1	44.4
Indiana	20	19	11,135,525	10,669,696	44.2	49.2
Kansas	5	5	1,588,125	1,273,764	49.2	51.1
Kentucky	20	23	8,043,420	8,270,196	11.6	12.4
Michigan	1	1	11,949	7,554	9.5	9.4
Missouri	11	10	2,960,031	2,991,932	74.3	80.2
Montana	2	2	302,978	171,882	6.8	4.6
New Mexico	3	3	303,470	395,347	20.5	30.9
Ohio	10	11	6,292,400	6,467,864	19.2	20.0
Oklahoma	3	1	239,169	90,000	8.2	3.4
Oregon	1	1	13,072	14,961	79.2	87.2
Pennsylvania 1/..........................	65	2/ 61	32,880,671	2/ 29,807,425	24.7	23.8
Tennessee	3	3	114,695	125,276	1.8	2.2
Utah	3	3	1,682,138	1,636,201	25.2	27.3
Virginia	20	18	3,623,548	3,401,629	21.0	21.9
Washington	20	21	1,114,360	816,465	82.1	82.4
West Virginia 3/.........................	132	140	31,671,908	31,592,766	20.8	21.9
Total	4/ 439	5/ 445	147,885,936	138,669,837	25.6	26.0

1/ Includes some coal mined in Pennsylvania and cleaned in Ohio and a small tonnage mined in other States and cleaned at a consumer-operated plant in Pennsylvania.

2/ For purpose of concealment includes one plant in Maryland.

3/ Includes some coal mined in West Virginia and cleaned in Ohio and Pennsylvania.

4/ Represents 56 plants using both wet and pneumatic methods of cleaning and 383 plants using only 1 cleaning method.

5/ Represents 59 plants using both wet and pneumatic methods of cleaning and 386 plants using only 1 cleaning method.

TABLE 33. - RESULT OF OPERATIONS AT BITUMINOUS-COAL-CLEANING PLANTS IN THE UNITED STATES, BY STATES, IN NET TONS, IN 1946

State	Total raw coal moved to cleaning plants	Coal obtained in cleaning process	Refuse resulting in cleaning process	Ratio of refuse to raw coal (percent) 1/	Total production from mines that moved coal to cleaning plants
Alabama	15,083,017	11,608,231	3,474,786	23.0	12,506,070
Alaska	245,139	164,623	80,516	32.8	164,623
Arkansas	121,054	98,177	22,877	18.9	339,414
Colorado	70,971	64,778	6,193	8.7	617,798
Illinois	33,444,031	28,164,779	5,279,252	15.8	42,374,504
Indiana	12,964,763	10,669,696	2,295,067	17.7	14,619,687
Kansas	1,611,453	1,273,764	337,689	21.0	1,273,764
Kentucky	10,451,929	8,270,196	2,181,733	20.9	11,858,482
Michigan	9,443	7,554	1,889	20.0	51,445
Missouri	3,781,186	2,991,932	789,254	20.9	3,101,033
Montana	180,000	171,882	8,118	4.5	298,119
New Mexico	427,963	395,347	32,616	7.6	894,616
Ohio	8,346,770	6,467,864	1,878,906	22.5	9,681,543
Oklahoma	100,000	90,000	10,000	10.0	243,321
Oregon	20,571	14,961	5,610	27.3	16,089
Pennsylvania 2/	26,877,382	23,705,369	3,172,013	11.8	31,301,927
Tennessee	138,403	125,276	13,127	9.5	550,630
Utah	1,673,470	1,636,201	37,269	2.2	2,034,492
Virginia	3,702,273	3,401,629	300,644	8.1	8,198,309
Washington	1,032,401	816,465	215,936	20.9	893,056
West Virginia 3/	35,691,911	31,592,766	4,099,145	11.5	59,255,000
Total at mines only 4/	155,974,130	131,731,490	24,242,640	15.5	200,273,922
Consumer plants 5/	7,659,200	6,938,347	720,853	9.4	-
Grand Total	163,633,330	138,669,837	24,963,493	15.3	-

1/ In Alabama (for example) for every 100 tons of raw coal cleaned in 1946, an average of 23 tons of refuse was discarded and 77 tons of clean marketable coal was obtained.

2/ Includes some coal that was mined in Pennsylvania and cleaned in Ohio; also includes tonnage from one plant in Maryland.

3/ Includes some coal that was mined in West Virginia and cleaned in Ohio and Pennsylvania.

4/ Includes all mechanical cleaning other than washeries operated by consumer steel companies.

5/ Includes central washeries in Colorado and Pennsylvania operated by consumer steel companies.

DETAILED STATISTICS, BY STATES AND COUNTIES

Detailed production and employment statistics are given in table 34 for each coal-producing county in the United States from which three or more operators submitted reports for 1946. Statistics on counties with less than three reporting producers have been combined with data for other counties in the same State to avoid disclosing individual figures, unless permission to publish has been granted by the operators. Production of mines on the border between two States has been credited to the State from which the coal was extracted rather than to that in which the tipple was situated. If the coal is mined from lands in both States, the tonnage has been apportioned accordingly.

The data in the present report, as in those published for many years by the Bureau of Mines, relate only to mines with an annual output of 1,000 tons or more. That fact should be borne in mind when the statistics in this report are compared with similar data compiled by State mine departments. Differences arise largely from variations in coverage by State reports, some of which include data for all mines regardless of size, and others only data for mines employing more than a specified minimum number, ranging from 2 to 10 men.

Because of a change in method of reporting,statistics of average production per man per day for 1946 are not precisely comparable with those for other years. The figure for 1946 was based on the average of men working daily while the figure for previous years was based on the average number of men on the rolls per pay period.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					ALABAMA								
Bibb	680,943	61,374	5,330	8,962	756,609	$5.18	846	83	220	1,149	199	228,812	3.31
Blount	131,844	101,042	241	356	233,483	4.51	279	54	84	417	218	90,735	2.57
Cullman	---	31,432	165	25	31,622	4.85	62	---	13	75	214	16,023	1.97
Jackson	2,195	18,849	40	10	21,094	4.73	31	---	8	39	237	9,226	2.29
Jefferson	7,877,833	239,279	64,854	31,284	8,213,250	4.88	8,721	210	1,753	10,684	219	2,342,132	3.51
Marion	184,084	143,560	3,132	---	330,776	6.11	439	15	108	562	212	118,958	2.78
St. Clair	866,236	44,753	7,599	20,231	938,819	4.79	480	135	123	738	221	162,980	5.76
Shelby	344,752	79,042	2,595	209	426,598	5.42	643	---	105	748	204	152,537	2.80
Tuscaloosa	403,809	68,125	610	---	472,544	4.02	325	60	97	482	211	101,691	4.65
Walker	3,711,447	629,761	409,089	1,074	4,751,371	4.59	3,979	347	902	5,228	204	1,063,986	4.47
Winston	---	7,132	---	---	7,132	4.73	7	---	3	10	227	2,270	3.14
Total Alabama	14,203,143	1,424,349	493,655	4/ 62,151	16,183,298	4.81	15,812	904	3,416	20,132	213	4,289,350	3.77
					ALASKA								
Total Alaska	308,195	51,614	716	4/ 6,284	366,809	$6.42	184	20	76	280	282	79,022	4.64
					ARIZONA								
Total Arizona	---	6,379	35	---	6,414	$3.79	16	---	2	18	156	2,804	2.29
					ARKANSAS								
Franklin	157,424	1,665	930	1,125	161,144	$6.00	175	20	35	230	196	45,128	3.57
Johnson	330,717	13,275	68	150	344,210	5.41	294	49	101	444	173	77,007	4.47
Logan	308,685	58	1,907	---	310,650	7.41	498	---	96	594	189	112,240	2.77
Pope	25,643	35,656	---	---	61,299	6.53	21	42	14	77	122	9,395	6.52
Scott	138,345	15,000	---	---	153,345	4.37	---	49	34	83	181	15,011	10.22
Sebastian	569,634	29,416	323	1,453	600,826	5.48	517	161	138	816	178	145,398	4.13
Total Arkansas	1,530,448	95,070	3,228	4/ 2,728	1,631,474	5.82	1,505	321	418	2,244	180	404,179	4.04

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Underground	Surface		Total			
								In strip pits	All others				
					COLORADO								
Boulder	163,269	207,271	3,158	3,941	377,639	$4.20	333	---	64	397	191	75,642	4.99
Delta	69,263	25,471	450	3,715	98,899	3.97	81	---	25	106	195	20,655	4.79
Elbert	---	1,060	---	129	1,189	2.80	2	---	1	3	133	398	2.99
El Paso	19,001	127,705	37,121	7,359	191,186	3.68	132	---	27	159	267	42,512	4.50
Fremont	119,126	272,883	2,428	70	394,507	4.50	305	---	83	388	194	75,410	5.23
Garfield	11,075	37,830	---	437	49,342	4.06	49	---	13	62	203	12,613	3.91
Gunnison	558,942	30,193	10,919	9,149	609,203	3.96	374	---	125	499	198	98,956	6.16
Huerfano	556,000	52,751	3,902	1,193	613,846	4.28	593	---	137	730	178	129,606	4.74
Jackson	22,731	12,833	---	---	35,564	3.74	---	16	3	19	214	4,073	8.73
Jefferson	99,849	23,575	1,137	815	125,376	3.47	100	---	17	117	207	24,180	5.19
La Plata	32,716	23,401	30	---	56,147	2.70	52	---	6	58	190	11,020	5.10
Las Animas	889,933	52,043	7,823	5/ 120,593	1,070,392	4.36	1,220	---	249	1,469	187	275,395	3.89
Mesa	69,756	21,327	448	315	91,846	3.45	76	---	14	90	199	17,928	5.12
Moffat	105,734	30,324	6,865	---	142,923	4.15	55	---	12	67	225	15,061	9.49
Montezuma	---	1,251	---	---	1,251	3.82	3	---	---	3	203	609	2.05
Montrose	---	1,459	---	---	1,459	4.15	2	---	---	2	149	298	4.90
Rio Blanco	---	10,423	45	---	10,468	4.58	8	---	2	10	291	2,910	3.60
Routt	823,969	36,855	7,165	28,314	896,303	4.25	664	38	419	1,121	156	174,796	5.13
Weld	816,413	304,252	10,321	14,982	1,145,968	3.54	774	---	177	951	168	159,939	7.17
Total Colorado	4,357,777	1,272,907	91,812	5/ 191,012	5,913,508	4.04	4,823	54	1,374	6,251	183	1,142,001	5.18
					GEORGIA								
Total Georgia	109,978	3,000	380	4/ 405	113,763	$4.70	57	40	26	123	253	31,167	3.65

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Underground	Surface		Total			
								In strip pits	All others				
ILLINOIS													
Brown	—	1,570	—	—	1,570	$2.51	—	2	—	2	132	264	5.95
Bureau	—	95,006	1,091	2,416	98,513	3.38	37	12	33	82	164	13,434	7.33
Christian	6,373,711	94,308	21,966	13,632	6,503,617	2.12	1,843	—	692	2,535	235	595,204	10.93
Clinton	110,859	113,396	1,094	3,313	228,662	2.84	290	—	60	350	150	52,448	4.36
Edgar	—	32,477	—	2,461	34,938	3.06	45	—	6	51	156	7,980	4.38
Franklin	13,532,223	283,202	191,305	160,480	14,167,210	2.83	5,584	—	1,959	7,543	225	1,699,634	8.34
Fulton	5,492,316	351,546	9,524	8,178	5,861,564	2.37	232	555	712	1,499	215	322,564	18.17
Gallatin	34,579	25,186	3,336	4,325	67,426	3.49	72	—	14	86	211	18,185	3.71
Grundy	1,160,539	238,812	5,296	3,609	1,408,256	3.04	—	263	236	499	255	127,300	11.06
Henry	474,347	67,600	863	360	543,170	2.70	55	47	121	223	252	56,114	9.68
Jackson	2,200,816	134,206	18,410	2,009	2,355,441	2.52	806	77	215	1,098	223	244,793	9.62
Jefferson	474,794	18,606	—	—	493,400	2.61	235	—	75	310	206	63,860	7.73
Knox	664,232	96,265	1,220	2,139	763,856	2.58	92	52	77	221	206	45,511	16.78
La Salle	14,649	135,897	10,152	434	161,132	4.32	192	24	44	260	155	40,315	4.00
Livingston	—	6,189	—	—	6,189	4.12	—	4	1	5	154	770	8.04
Logan	—	51,762	—	60	51,822	3.46	54	—	8	62	159	9,860	5.26
Macon	—	19,637	490	1,642	21,769	5.07	56	—	7	63	128	8,064	2.70
Macoupin	4,622,122	200,363	22,843	139,734	4,985,062	2.39	2,170	—	531	2,701	256	691,378	7.21
Madison	1,143,233	828,015	14,741	69,495	2,055,484	2.65	1,012	—	276	1,288	238	306,551	6.71
Marion	130,813	20,947	1,212	6,950	159,922	2.50	101	—	47	148	198	29,363	5.45
Menard	—	41,738	857	151	42,746	2.97	62	—	12	74	207	15,353	2.78
Mercer	—	1,100	23	100	1,223	4.09	3	—	1	4	177	708	1.73
Montgomery	740,075	30,893	—	43,900	814,868	2.23	229	—	88	317	264	83,688	9.74
Peoria	332,726	256,117	2,476	311	591,630	2.65	352	—	63	415	200	83,194	7.11
Perry	3,648,787	50,597	12,864	33,068	3,745,316	2.47	763	246	626	1,635	202	330,392	11.34
Randolph	2,125,256	89,469	8,184	18,863	2,241,772	2.48	647	57	265	969	208	201,562	11.12
St. Clair	1,567,821	1,364,846	14,151	55,753	3,002,571	2.50	1,217	99	327	1,643	208	342,238	8.77
Saline	4,212,266	77,945	23,943	45,269	4,359,423	3.00	1,637	155	598	2,390	231	551,216	7.91
Sangamon	1,479,724	621,600	13,929	18,261	2,133,514	2.64	1,427	—	232	1,659	197	327,026	6.52
Schuyler	99,550	46,726	140	3	146,419	2.54	21	20	33	74	199	14,707	9.96
Tazewell	—	78,154	1,043	346	79,543	3.95	92	—	14	106	170	18,062	4.40
Vermilion	1,152,213	179,136	20,909	5,075	1,357,333	2.82	1,218	21	198	1,437	160	230,299	5.89
Warren	—	3,398	—	20	3,418	3.75	3	—	1	4	300	1,200	2.85
Washington	413,870	58,827	1,674	14,445	488,816	2.64	240	—	58	298	221	65,801	7.43
Will	88,281	125,303	93	69	213,746	2.97	—	47	29	76	187	14,190	15.06
Williamson	3,892,614	347,209	10,501	11,046	4,261,370	2.70	1,569	197	531	2,297	178	408,771	10.42
Woodford	—	14,109	—	1,765	15,874	5.69	39	—	7	46	223	10,258	1.55
Total Illinois	56,182,416	6,202,157	414,330	4/ 669,682	63,468,585	2.61	22,395	1,878	8,197	32,470	217	7,032,257	6/ 9.03

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					INDIANA								
Clay	1,675,547	195,729	1,306	2,003	1,874,585	$2.82	23	418	282	723	194	139,942	13.40
Daviess	28,688	17.797	---	---	46,485	3.11	31	5	9	45	227	10,203	4.56
Dubois	---	22,334	---	6	22,340	2.73	13	---	4	17	274	4,659	4.80
Fountain	---	87,338	---	---	87,338	3.67	---	22	6	28	248	6,944	12.58
Gibson	600,257	124,170	---	21,154	745,581	3.10	469	---	78	547	169	92,435	8.07
Greene	1,036,422	49,281	873	4,108	1,090,684	2.76	271	70	95	436	130	78,544	13.89
Knox	3,122,459	336,000	16,503	21,989	3,496,951	2.51	1,222	74	420	1,716	242	415,861	8.41
Martin	---	1,324	10	---	1,334	2.52	3	---	---	3	233	699	1.91
Owen	---	14,698	33	---	14,731	3.34	---	9	2	11	134	1,469	10.03
Parke	---	30,461	171	12	30,644	3.80	39	---	9	48	198	9,520	3.22
Perry	---	2,450	---	---	2,450	2.72	3	---	---	3	200	600	4.08
Pike	3,387,097	53,831	6,246	11,642	3,458,816	2.43	27	478	411	916	218	200,119	17.28
Spencer	111,604	135,834	350	562	248,350	3.13	27	54	38	119	195	23,237	10.69
Sullivan	2,740,818	87,941	7,103	8,300	2,844,162	2.70	723	250	385	1,358	206	279,572	10.17
Vermillion	182,620	84,316	455	688	268,079	2.48	48	89	84	221	136	30,162	8.89
Vigo	3,260,103	300,803	426,883	17,183	4,004,972	2.58	1,783	106	388	2,277	192	437,048	9.16
Warrick	3,264,760	190,347	3,248	1,090	3,459,445	2.50	347	401	374	1,122	222	249,531	13.86
Total Indiana	19,410,375	1,734,654	463,181	4/ 88,737	21,696,947	2.61	5,029	1,976	2,585	9,590	207	1,980,545	6/ 10.96

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Underground	Surface		Total			
								In strip pits	All others				
					IOWA								
Appanoose	68,446	121,536	2,418	345	192,745	$4.41	482	---	63	545	138	75,410	2.56
Boone	51,274	30,296	1,355	---	82,925	4.10	112	---	18	130	163	21,197	3.91
Dallas	172,233	44,942	710	679	218,564	3.64	217	---	45	262	201	52,733	4.14
Davis	3,429	3,486	---	---	6,915	3.60	3	10	2	15	194	2,912	2.37
Greene	1,585	9,079	55	180	10,899	3.56	13	---	3	16	218	3,484	3.13
Guthrie	---	4,791	40	---	4,831	5.79	16	---	2	18	144	2,590	1.87
Jasper	---	16,970	116	---	17,086	4.09	36	---	8	44	173	7,629	2.24
Lucas	38,190	33,856	1,478	1,103	74,627	4.02	113	---	12	125	140	17,475	4.27
Mahaska	135,266	113,559	1,644	188	250,657	3.33	16	93	52	161	217	34,930	7.18
Marion	331,318	196,980	2,115	42	530,455	3.60	250	70	77	397	211	83,691	6.34
Monroe	92,466	80,866	1,634	320	175,286	3.42	203	---	34	237	191	45,157	3.88
Page	---	6,900	---	---	6,900	5.51	8	---	1	9	300	2,700	2.56
Polk	---	47,647	709	195	48,551	4.09	106	---	14	120	105	12,568	3.86
Van Buren	---	28,348	80	37	28,465	3.80	16	13	11	40	187	7,472	3.81
Wapello	20,000	103,817	212	172	124,201	3.04	63	16	21	100	181	18,106	6.86
Warren	---	6,302	---	---	6,302	3.68	6	---	2	8	225	1,800	3.50
Wayne	---	4,269	---	30	4,299	4.26	14	---	2	16	138	2,200	1.95
Webster	---	4,334	91	---	4,425	3.81	21	---	3	24	50	1,200	3.69
Total Iowa	914,207	857,978	12,657	4/ 3,291	1,788,133	3.68	1,695	202	370	2,267	173	393,254	4.55
					KANSAS								
Bourbon	137,367	24,836	87	548	162,838	$2.78	---	45	30	75	174	13,080	12.45
Cherokee	832,826	46,870	3,496	1,671	884,863	2.65	20	147	151	318	216	68,566	12.91
Crawford	1,286,530	56,427	4,074	2,963	1,349,994	2.71	214	290	182	686	185	127,101	10.62
Franklin	---	1,571	---	---	1,571	5.95	7	---	1	8	98	784	2.00
Labette	---	3,038	---	---	3,038	3.67	---	6	2	8	103	825	3.68
Leavenworth	---	3,665	44,812	1,106	49,583	5.04	184	---	50	234	305	71,370	.69
Linn	---	5,685	---	---	5,685	3.58	11	9	6	26	158	4,109	1.38
Osage	---	35,565	248	---	35,813	5.06	82	10	13	105	187	19,598	1.83
Total Kansas	2,256,723	177,657	52,717	4/ 6,288	2,493,385	2.78	518	507	435	1,460	209	305,433	7/ 8.16

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					KENTUCKY								
Eastern Kentucky:													
Bell	2,164,206	240,970	21,051	326	2,426,553	$3.96	2,436	—	399	2,835	191	540,670	4.49
Boyd	438,807	157,799	—	—	596,606	3.45	232	76	65	373	270	100,740	5.92
Breathitt	17,194	12,980	45,619	15	75,808	3.83	76	—	16	92	205	18,881	4.02
Carter	56,476	129,730	177	622	187,005	3.51	205	—	41	246	196	48,323	3.87
Clay	176,590	205,561	42	—	382,193	3.51	452	53	88	593	199	118,120	3.24
Clinton	—	42,300	—	—	42,300	3.32	41	—	6	47	178	8,370	5.05
Elliott	—	31,734	—	—	31,734	2.77	26	3	5	34	274	9,300	3.41
Floyd	6,014,994	175,825	17,328	104	6,208,251	3.82	4,618	—	906	5,524	204	1,126,069	5.51
Greenup	—	58,424	—	—	58,424	3.07	87	—	15	102	218	22,212	2.63
Harlan	11,057,098	149,130	98,090	7,853	11,312,171	4.00	9,451	—	1,774	11,225	234	2,621,768	4.31
Jackson	—	115,093	2,253	420	117,766	3.45	114	—	41	155	247	38,339	3.07
Johnson	664,659	155,950	4,434	1,462	826,505	4.27	926	—	148	1,074	205	219,910	3.76
Knott	988,451	2,056	2,454	170	993,131	3.64	628	—	116	744	208	154,844	6.41
Knox	447,145	70,090	3,485	—	520,720	3.93	466	—	97	563	207	116,681	4.46
Laurel	186,284	231,788	155	—	418,227	3.50	247	54	49	350	194	67,913	6.16
Lawrence	4,713	9,141	—	—	13,854	3.01	27	—	5	32	185	5,921	2.34
Lee	19,050	44,071	—	—	63,121	3.41	58	—	11	69	239	16,460	3.83
Leslie	339,542	18,281	—	—	357,823	3.99	241	—	44	285	213	60,727	5.89
Letcher	6,033,369	1,469,720	41,238	3,416	7,547,743	3.89	6,371	32	1,155	7,558	213	1,610,721	4.69
Magoffin	54,036	26,217	45	—	80,298	3.42	115	—	20	135	145	19,549	4.11
Martin	367,715	28,387	224	—	396,326	3.21	206	—	50	256	213	54,432	7.28
McCreary	693,304	51,970	9,670	10,682	765,626	3.90	717	—	96	813	209	170,209	4.50
Menifee	—	25,725	—	—	25,725	3.29	25	—	4	29	238	6,889	3.73
Morgan	—	31,649	—	—	31,649	3.76	56	—	9	65	225	14,651	2.16
Perry	5,995,434	157,708	88,988	1,747	6,243,877	3.65	4,656	85	857	5,598	213	1,195,041	5.22
Pike	8,406,379	472,130	77,767	8/144,564	9,100,840	3.51	6,415	37	1,243	7,695	214	1,643,844	5,54
Pulaski	—	117,000	—	—	117,000	3.27	104	5	15	124	213	26,390	4.43
Rockcastle	3,068	64,270	75	18	67,431	2.95	78	12	15	105	180	18,850	3.58
Wayne	—	24,790	—	—	24,790	3.45	37	—	8	45	206	9,248	2.68
Whitley	157,250	150,356	601	50	308,257	3.75	451	19	74	544	147	79,851	3.86
Total Eastern Kentucky	44,285,764	4,470,845	413,696	8/171,449	49,341,754	3.78	39,562	376	7,372	47,310	214	10,144,923	4.86

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
								Surface					
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	In strip pits	All others	Total			
KENTUCKY - Continued													
Western Kentucky:													
Butler	—	52,888	20	—	52,908	$2.47	45	2	11	58	212	12,285	4.31
Christian	—	5,980	—	—	5,980	2.78	6	—	2	8	190	1,520	3.93
Daviess	13,511	260,297	275	783	274,866	2.61	206	12	42	260	181	47,013	5.85
Edmonson	—	16,770	—	—	16,770	2.50	14	—	5	19	238	4,520	3.71
Hancock	28,621	39,565	—	—	68,186	2.61	34	25	19	78	140	10,945	6.23
Henderson	—	299,007	20	—	299,027	2.14	223	—	37	260	237	61,720	4.84
Hopkins	9,477,292	401,051	7,642	7,481	9,893,466	2.35	2,773	616	1,042	4,431	213	945,685	10.46
McLean	8,067	37,783	—	—	45,850	2.73	44	—	8	52	202	10,516	4.36
Muhlenberg	4,271,832	402,589	22,487	10,043	4,706,951	2.33	2,329	170	612	3,111	186	577,886	8.15
Ohio	466,980	268,693	1,807	50	737,530	2.51	306	67	118	491	192	94,465	7.81
Union	601,060	22,273	1,005	492	624,830	2.16	383	—	66	449	175	78,757	7.93
Webster	390,023	91,060	3,776	—	484,859	2.46	261	46	60	367	159	58,432	8.30
Total Western Kentucky	15,257,386	1,897,956	37,032	18,849	17,211,223	2.35	6,624	938	2,022	9,584	199	1,903,744	6/ 9.04
Total Kentucky	59,543,150	6,368,801	450,728	190,298	66,552,977	3.41	46,186	1,314	9,394	56,894	212	12,048,667	5.52

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					MARYLAND								
Allegany	836,678	272,292	3,697	182	1,112,849	$4.20	752	256	267	1,275	173	220,226	5.05
Garrett	752,235	131,757	3,163	2,541	889,696	4.06	648	82	149	879	201	176,655	5.04
Total Maryland	1,588,913	404,049	6,860	4/ 2,723	2,002,545	4.14	1,400	338	416	2,154	184	396,881	5.05
					MICHIGAN								
Bay	---	9,373	267	1,764	11,404	$5.73	22	---	6	28	225	6,300	1.81
Saginaw	---	15,738	323	1,080	17,141	6.61	31	---	6	37	208	7,696	2.23
Tuscola	29,539	17,057	1,138	3,711	51,445	6.56	75	---	10	85	160	13,600	3.78
Total Michigan	29,539	42,168	1,728	4/ 6,555	79,990	6.45	128	---	22	150	184	27,596	2.90
					MISSOURI								
Adair	25,624	75,665	466	522	102,277	$3.43	177	---	31	208	177	36,716	2.79
Barton	132,693	43,040	479	2	176,214	2.86	24	48	27	99	156	15,433	11.42
Bates	1,002,577	---	745	---	1,003,322	2.56	---	99	100	199	253	50,279	19.96
Boone	---	45,586	---	---	45,586	2.20	---	12	2	14	268	3,748	12.16
Callaway	---	170,160	---	---	170,160	2.91	---	45	36	81	315	25,511	6.67
Clay	---	15,751	325	163	16,239	4.95	98	---	13	111	42	4,680	3.47
Dade	---	8,073	29	---	8,102	3.50	---	8	3	11	270	2,970	2.73
Daviess	---	7,637	236	---	7,873	5.31	20	---	5	25	160	4,000	1.97
Harrison	---	6,471	195	805	7,471	5.08	16	---	3	19	253	4,810	1.55
Henry	596,412	84,400	---	---	680,812	2.63	2	92	51	145	253	36,661	18.57
Jasper	---	2,914	---	512	3,426	3.32	---	4	1	5	205	1,025	3.34
Johnson	33,626	6,074	---	---	39,700	2.78	---	8	3	11	220	2,416	16.43
Lafayette	---	43,137	801	13	43,951	5.32	108	---	17	125	185	23,110	1.90
Linn	---	9,261	---	---	9,261	3.97	30	---	6	36	121	4,362	2.12
Macon	423,203	72,483	1,923	---	497,609	2.60	54	86	67	207	239	49,494	10.05
Monroe	---	6,152	---	---	6,152	3.48	---	10	1	11	259	2,854	2.16
Putnam	---	18,904	---	---	18,904	4.36	33	---	9	42	159	6,688	2.83
Ralls	---	1,202	---	---	1,202	4.45	2	---	1	3	203	609	1.97
Randolph	451,626	70,063	70	---	521,759	2.80	141	33	76	250	230	57,386	9.09
Ray	1,933	44,562	403	---	46,898	5.73	165	---	17	182	152	27,617	1.70
Vernon	279,227	46,239	431	---	325,897	2.81	---	82	35	117	229	26,762	12.18
Total Missouri	2,946,921	777,774	6,103	4/ 2,017	3,732,815	2.79	870	527	504	1,901	204	387,131	7/ 9.64

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Underground	Surface		Total			
								In strip pits	All others				
					MONTANA								
Montana bituminous coal:													
Blaine	---	8,985	---	---	8,985	$5.57	14	---	2	16	280	4,476	2.01
Carbon	314,532	25,512	3,750	627	344,421	3.61	183	---	98	281	197	55,391	6.22
Cascade	108,118	13,076	153	100	121,447	2.32	70	---	10	80	139	11,119	10.92
Chouteau	---	2,700	---	---	2,700	4.53	5	---	1	6	162	969	2.79
Fergus	---	1,215	---	---	1,215	4.80	2	---	---	2	175	350	3.47
Musselshall	705,117	39,448	4,395	2,432	751,392	3.20	412	---	207	619	194	120,081	6.26
Rosebud	2,449,897	---	---	2,856	2,452,753	1.00	---	98	51	149	298	44,411	55.23
Total bituminous	3,577,664	90,936	8,298	6,015	3,682,913	1.75	686	98	369	1,153	205	236,797	6/ 15.55
Montana lignite	---	40,013	---	---	40,013	2.63	27	4	8	39	175	6,837	5.85
Total Montana	3,577,664	130,949	8,298	4/ 6,015	3,722,926	1.76	713	102	377	1,192	204	243,634	6/ 15.28
					NEW MEXICO								
Bernalillo	---	2,986	20	---	3,006	$4.65	5	---	1	6	166	995	3.02
Colfax	996,601	5,799	4,065	3,715	1,010,180	3.90	595	---	172	767	227	174,437	5.79
McKinley	114,503	45,855	2,143	28,948	191,449	5.24	278	---	66	344	171	58,992	3.25
Rio Arriba	18,472	3,183	50	---	21,705	3.64	18	---	6	24	229	5,484	3.96
Sandoval	---	1,610	4	---	1,614	5.00	4	---	1	5	192	960	1.68
San Juan	---	19,802	50	---	19,852	3.49	35	---	6	41	294	12,035	1.65
Santa Fe	12,093	13,662	2,175	---	27,930	5.64	45	---	20	65	300	19,500	1.43
Socorro	---	4,404	25	114	4,543	5.27	13	---	4	17	241	4,092	1.11
Total New Mexico	1,141,669	97,301	8,532	4/ 32,777	1,280,279	4.14	993	---	276	1,269	218	276,495	4.63
					NORTH DAKOTA (LIGNITE)								
Total North Dakota	2,097,317	373,631	9/ 67,981	4/ 15,753	2,554,682	$1.68	156	255	263	674	241	162,388	6/ 15.73

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
OHIO													
Athens	1,638,976	95,645	11,132	---	1,745,753	$3.57	1,132	96	527	1,755	173	303,636	5.75
Belmont	7,721,048	208,775	21,074	3,465	7,954,362	3.14	4,217	220	996	5,433	220	1,193,124	6.67
Carroll	376,621	167,289	2,017	191	546,118	2.96	222	54	60	336	227	76,306	7.16
Columbiana	88,913	611,303	88	73	700,377	3.02	139	135	71	345	227	78,477	8.92
Coshocton	153,737	319,176	1,032	535	474,480	3.20	269	61	82	412	138	77,577	6.12
Gallia	47,364	86,667	15	---	134,046	3.36	111	---	23	134	243	32,623	4.11
Guernsey	321,846	72,059	1,211	192	395,308	3.08	262	50	50	362	180	65,034	6.08
Harrison	6,182,551	47,504	6,105	11,713	6,247,873	2.78	850	648	747	2,245	231	518,203	12.06
Hocking	600,573	142,882	701	10	744,166	3.40	415	94	95	604	184	111,180	6.69
Holmes	---	113,812	---	---	113,812	3.02	6	14	22	42	272	11,440	9.95
Jackson	54,614	64,127	33,637	---	152,378	3.50	132	38	33	203	188	38,186	3.99
Jefferson	4,539,315	825,391	10,624	7,981	5,383,311	2.93	1,617	420	666	2,703	213	575,254	9.36
Lawrence	819	75,830	5,249	---	81,898	2.65	96	---	16	112	219	24,487	3.34
Mahoning	2,571	144,916	---	1,739	149,226	3.06	7	43	12	62	204	12,658	11.79
Meigs	250,098	68,002	527	---	318,627	3.19	299	14	60	373	198	73,985	4.31
Morgan	262,837	35,318	220	70	298,445	3.29	168	33	55	256	181	46,440	6.43
Muskingum	970,515	189,940	1,002	260	1,161,717	2.37	390	122	69	581	197	114,459	10.15
Noble	266,676	32,070	---	---	298,746	2.00	17	48	20	85	173	14,743	20.26
Perry	2,851,497	312,469	1,805	121	3,165,892	3.00	1,286	419	478	2,183	182	398,100	7.95
Stark	1,386	256,975	277	19	258,657	2.81	32	75	34	141	198	27,923	9.26
Tuscarawas	161,739	1,417,526	69,646	391	1,649,302	2.81	528	197	164	889	225	199,872	8.25
Vinton	119,340	77,828	86	6	197,260	3.46	66	106	38	210	163	34,168	5.77
Wayne	---	46,417	75	---	46,492	2.67	---	20	7	27	128	3,461	13.43
Other counties:													
Portage and Washington	---	96,016	---	---	96,016	2.76	2	17	6	25	270	6,739	14.25
Total Ohio	26,613,036	5,507,937	166,523	4/ 26,766	32,314,262	2.99	12,263	2,924	4,331	19,518	207	4,038,075	6/ 8.00

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					OKLAHOMA								
Coal	216,791	22,609	74	5	239,479	$4.28	20	59	46	125	232	29,018	7/ 8.25
Craig	---	10,784	---	---	10,784	3.64	---	13	4	17	192	3,266	3.30
Haskell	37,598	1,853	---	482	39,933	3.98	10	34	19	63	115	7,238	5.52
Latimer	123,893	2.855	---	---	126,748	4.00	6	29	24	59	255	15,073	7/ 8.41
Le Flore	181,178	16,812	475	434	198,899	5.73	384	---	89	473	153	72,249	2.75
Muskogee	143,542	8,656	---	---	152,198	3.00	---	54	15	69	270	18,624	7/ 8.17
Okmulgee	827,941	19,315	---	1,490	848,746	3.93	488	28	85	601	238	142,982	5.94
Pittsburg	91,720	5.196	245	858	98,019	5.17	117	17	27	161	192	30,911	3.17
Rogers	449,154	37,976	2,398	4,992	494,520	2.96	---	107	63	170	287	48,721	7/ 10.15
Tulsa	14,542	8,075	132	2,480	25,229	3.59	24	11	11	46	156	7,158	3.52
Wagoner	400,266	12,559	---	---	412,825	2.90	---	76	80	156	192	30,028	7/ 13.75
Total Oklahoma	2,486,625	146,690	3,324	4/ 10,741	2,647,380	3.75	1,049	428	463	1,940	209	405,268	6.53
					OREGON								
Total Oregon	7,900	9,218	35	---	17,153	$4.40	72	---	13	85	249	21,164	.81

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
PENNSYLVANIA (BITUMINOUS COAL)													
Allegheny	12,064,051	2,434,353	1,242,616	3,566	15,744,586	$3.43	8,239	991	1,796	11,026	209	2,299,930	6.85
Armstrong	4,825,582	225,987	23,336	391	5,075,296	3.41	2,794	394	807	3,995	190	760,423	6.67
Beaver	45,165	211,705	41	2,166	259,077	3.52	129	75	49	253	197	49,720	5.21
Bedford	661,551	50,591	3,116	1,260	716,518	4.30	612	82	137	831	193	160,444	4.47
Blair	53,380	120,198	1,251	---	174,829	3.39	128	28	33	189	195	36,815	4.75
Butler	1,099,607	628,566	16,059	38	1,744,270	3.46	737	379	249	1,365	205	280,489	6.22
Cambria	13,118,093	657,197	1,233,643	173,683	15,182,616	4.18	12,379	474	2,595	15,448	206	3,189,827	4.76
Cameron	---	3,000	10	10	3,020	2.98	4	---	1	5	200	1,000	3.02
Centre	1,280,412	201,492	953	70	1,482,927	3.27	612	314	190	1,116	206	230,100	6.44
Clarion	2,551,363	439,795	2,664	55	2,993,877	3.25	833	536	335	1,704	215	367,006	8.16
Clearfield	6,013,880	732,789	8,647	23,302	6,778,618	3.68	2,749	1,537	994	5,280	195	1,027,703	6.60
Clinton	32,237	230,098	338	84	262,757	3.19	66	65	27	158	202	31,983	8.22
Elk	261,906	243,702	2,148	11,597	519,353	3.78	387	98	92	577	176	101,657	5.11
Fayette	11,945,672	1,428,044	181,504	10/3,112,190	16,667,410	3.58	10,883	592	1,794	13,269	207	2,745,865	6.07
Forest	---	3,498	---	---	3,498	3.75	5	---	3	8	304	2,432	1.44
Greene	9,474,245	41,018	30,675	15,129	9,561,067	3.69	6,200	183	1,348	7,731	224	1,733,985	5.51
Huntingdon	501,427	188,482	3,284	1,140	694,333	4.21	400	158	98	656	203	133,460	5.20
Indiana	7,778,990	432,915	287,848	10/ 314,771	8,814,524	3.65	4,961	601	1,166	6,728	206	1,383,441	6.37
Jefferson	2,267,700	313,231	28,725	2,934	2,612,590	3.41	1,261	446	337	2,044	195	399,188	6.54
Lawrence	---	142,721	3,010	4	145,735	3.12	29	41	25	95	176	16,685	8.73
Lycoming	---	49,065	150	---	49,215	3.61	27	8	14	49	257	12,579	3.91
McKean	8,135	33,809	---	---	41,944	3.01	2	15	7	24	167	4,000	10.49
Mercer	124,566	266,845	1,146	70	392,627	3.66	75	102	40	217	203	43,987	8.93
Somerset	5,867,853	502,888	23,112	37,719	6,431,572	3.84	4,361	473	1,006	5,840	198	1,157,322	5.56
Tioga	77,942	84,809	831	1,101	164,683	4.30	143	19	43	205	198	40,524	4.06
Venango	15,890	107,655	2,200	---	125,745	3.42	28	34	19	81	157	12,738	9.87
Washington	17,818,720	838,651	262,228	31,210	18,950,809	3.69	11,190	856	2,258	14,304	218	3,124,980	6.06
Westmoreland	7,322,424	1,397,558	140,515	10/1,042,863	9,903,360	3.51	5,225	823	1,230	7,278	204	1,488,057	6.66
Total Pennsylvania	105,210,791	12,010,622	3,500,050	10/4,775,353	125,496,856	3.66	74,459	9,324	16,693	100,476	207	20,836,340	6.02

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					SOUTH DAKOTA (LIGNITE)								
Total South Dakota	1,680	15,266	---	---	16,946	$2.15	---	14	---	14	169	2,364	7.17
					TENNESSEE								
Anderson	1,180,841	8,826	10,235	615	1,200,517	$3.75	917	7	167	1,091	208	227,259	5.28
Bledsoe	45,800	7,282	260	---	53,342	3.93	13	17	7	37	207	7,670	6.95
Campbell	1,365,460	69	32,800	1,340	1,399,669	4.07	1,363	26	291	1,680	207	347,135	4.03
Claiborne	1,208,947	32,101	15,168	153	1,256,369	3.76	1,184	---	235	1,419	192	273,115	4.60
Cumberland	---	3,255	---	424	3,679	4.00	10	---	2	12	248	2,980	1.23
Fentress	204,917	25,431	2,709	---	233,057	3.56	167	---	26	193	226	43,705	5.33
Grundy	348,323	---	18,770	610	367,703	4.19	444	13	45	502	185	92,982	3.95
Hamilton	18,578	15,768	230	---	34,576	3.47	48	---	15	63	208	13,105	2.64
Marion	306,550	28,922	3,222	154	338,848	4.00	657	---	110	767	135	103,216	3.28
Morgan	86,218	28,694	400	13,200	128,512	1.95	226	12	74	312	243	75,777	1.70
Overton	44,885	4,630	10,849	957	61,321	3.58	62	---	10	72	212	15,228	4.03
Putnam	73,000	60,000	---	---	133,000	3.90	103	---	17	120	240	28,800	4.62
Rhea	9,439	3,700	100	200	13,439	3.85	22	---	5	27	200	5,409	2.48
Scott	309,703	---	1,738	---	311,441	3.89	263	---	33	296	199	58,906	5.29
Sequatchie	56,465	23,762	77	---	80,304	3.82	116	---	16	132	200	26,403	3.04
Van Buren	1,001	1,574	---	---	2,575	3.61	8	---	3	11	205	2,260	1.14
Total Tennessee	5,260,127	244,014	96,558	4/ 17,653	5,618,352	3.84	5,603	75	1,056	6,734	197	1,323,950	4.24
					TEXAS (LIGNITE)								
Total Texas	55,604	---	374	---	55,978	$0.83	---	10	15	25	248	6,200	9.03

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Under-ground	Surface		Total			
								In strip pits	All others				
					UTAH								
Carbon	3,953,794	133,795	12,081	11/18,890	4,118,560	$3.57	1,809	---	695	2,504	230	576,519	7.14
Emery	1,701,044	53,256	4,576	10,612	1,769,488	3.61	840	---	273	1,113	229	255,376	6.93
Grand	30,338	---	---	---	30,338	3.57	25	---	7	32	234	7,488	4.05
Iron	---	8,786	---	---	8,786	2.64	8	---	1	9	255	2,295	3.83
Kane	---	3,719	---	---	3,719	3.55	3	---	1	4	281	1,124	3.31
Sevier	---	37,846	---	---	37,846	3.30	28	---	6	34	210	7,130	5.31
Summit	8,072	16,979	225	---	25,276	2.58	13	---	5	18	198	3,571	7.08
Total Utah	5,693,248	254,381	16,882	11/ 29,502	5,994,013	3.58	2,726	---	988	3,714	230	853,503	12/ 7.02
					VIRGINIA								
Buchanan	4,428,634	22,123	20,906	984	4,472,647	$3.71	2,870	67	548	3,485	236	823,483	5.43
Dickenson	1,320,434	1,729	10,955	530	1,333,648	3.83	972	---	195	1,167	233	271,492	4.91
Lee	511,802	80,120	6,614	465	599,001	4.01	619	---	114	733	197	144,740	4.14
Montgomery	166,793	10,791	1,882	900	180,366	3.99	133	---	76	209	217	45,438	3.97
Russell	1,076,288	99,103	10,273	939	1,186,603	3.66	749	37	156	942	222	208,993	5.68
Scott	1,855	40,730	1,861	---	44,446	3.47	45	---	10	55	240	13,201	3.37
Tazewell	3,813,667	21,130	38,534	10,866	3,884,197	4.24	3,363	---	672	4,035	247	994,972	3.90
Wise	3,437,718	86,505	23,368	13/ 278,396	3,825,987	3.61	2,818	141	621	3,580	207	741,389	5.16
Total Virginia	14,757,191	362,231	114,393	13/ 293,080	15,526,895	3.84	11,569	245	2,392	14,206	228	3,243,708	4.79
					WASHINGTON								
King	143,645	168,029	2,029	191	313,894	$5.90	343	28	114	485	190	92,389	3.40
Kittitas	393,077	22,981	17,418	9,200	442,676	5.24	372	32	199	603	223	134,340	3.30
Lewis	7,231	49,228	217	---	56,676	4.69	61	---	12	73	210	15,353	3.69
Pierce	7,598	6,748	---	23	14,369	5.94	17	---	4	21	213	4,466	3.22
Thurston	42,834	7,363	---	410	50,607	3.72	29	9	17	55	176	9,657	5.24
Whatcom	63,840	45,159	749	3,157	112,905	6.26	104	---	32	136	244	33,213	3.40
Total Washington	658,225	299,508	20,413	4/ 12,981	991,127	5.47	926	69	378	1,373	211	289,418	3.42

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Underground	Surface		Total			
								In strip pits	All others				
					WEST VIRGINIA								
Barbour	2,836,455	10,043	2,984	45	2,849,527	$3.05	1,170	259	435	1,864	180	335,000	8.51
Boone	5,077,062	33,295	27,620	1,365	5,139,342	3.54	3,054	29	685	3,768	233	879,308	5.84
Braxton	70,316	3,680	---	---	73,996	3.03	33	22	16	71	125	8,868	8.34
Brooke	737,464	411,771	815,939	178	1,965,352	3.15	682	184	161	1,027	224	230,174	8.54
Clay	1,089,823	9,198	19,716	23,935	1,142,672	4.24	634	---	219	853	253	216,148	5.29
Fayette	11,803,968	193,483	377,750	14/ 69,565	12,444,766	4.08	8,551	369	1,645	10,565	237	2,503,713	4.97
Gilmer	67,487	2,448	---	---	69,935	2.19	21	25	14	60	149	8,931	7.83
Grant	---	137,367	---	---	137,367	3.91	52	30	21	103	199	20,515	6.70
Greenbrier	2,335,035	69,366	16,488	379	2,421,268	4.21	1,575	141	303	2,019	217	438,156	5.53
Hancock	20,086	61,453	---	1,010	82,549	2.74	5	22	6	33	247	8,144	10.14
Harrison	10,331,922	631,023	56,583	260	11,019,788	3.05	2,967	1,321	1,248	5,536	166	919,899	11.98
Kanawha	7,849,067	261,824	54,438	2,108	8,167,437	3.65	5,549	12	947	6,508	232	1,512,548	5.40
Lewis	21,510	1,541	---	---	23,051	3.17	3	30	5	38	62	2,350	9.81
Logan	19,849,468	22,575	133,627	21,625	20,027,295	3.47	9,685	---	2,460	12,145	238	2,894,846	6.92
Marion	7,277,150	143,404	466,529	22,438	7,909,521	3.21	4,447	45	1,012	5,504	200	1,098,819	7.20
Marshall	595,623	69,178	175,657	13,604	854,062	3.44	580	18	92	690	221	152,694	5.59
Mason	146,341	53,052	438	---	199,831	3.37	174	---	39	213	186	39,694	5.03
McDowell	21,215,010	128,407	299,495	66,108	21,709,020	4.08	13,563	25	3,322	16,910	242	4,097,740	5.30
Mercer	2,506,355	14,692	29,914	799	2,551,760	4.15	2,045	---	566	2,611	246	642,912	3.97
Mineral	395,581	71,791	534	82	467,988	4.14	110	84	58	252	201	50,542	9.26
Mingo	4,648,624	79,828	37,406	68	4,765,926	3.62	3,187	63	668	3,918	220	861,063	5.53
Monongalia	8,560,230	509,409	14,824	318	9,084,781	3.09	3,933	189	1,127	5,249	200	1,049,084	8.66
Nicholas	1,690,740	27,186	5,893	14/ 29,808	1,753,627	3.81	1,016	75	203	1,294	203	263,317	6.66
Ohio	1,280,932	172,146	5,329	10	1,458,417	3.43	1,171	---	186	1,357	216	293,687	4.97
Preston	2,408,492	29,448	133,327	14/ 134,858	2,706,125	3.61	1,674	131	365	2,170	225	487,297	5.55
Putnam	---	12,260	40	---	12,300	2.93	17	---	4	21	186	3,910	3.15
Raleigh	12,724,722	56,677	123,214	41,041	12,945,654	4.02	8,814	76	1,906	10,796	239	2,576,076	5.03
Randolph	1,797,759	104,341	7,268	4,546	1,913,914	3.51	1,080	184	337	1,601	183	292,855	6.54
Taylor	863,961	232,312	821	1,134	1,098,228	3.18	394	149	134	677	179	120,965	9.08
Tucker	1,065,439	8,793	7,499	32,962	1,114,693	3.96	360	184	102	646	219	141,570	7.87
Upshur	389,699	52,721	700	1,834	444,954	2.92	327	23	68	418	150	62,816	7.08
Wayne	381,211	24,234	179	---	405,624	3.41	379	---	77	456	190	86,555	4.69
Webster	1,784,545	12,665	7,013	1,803	1,806,026	3.23	1,195	3	334	1,532	210	322,444	5.60
Wyoming	5,136,755	62,291	40,356	13,894	5,253,296	4.02	3,161	---	685	3,846	234	901,608	5.83
Total West Virginia	136,958,832	3,713,902	2,861,581	14/ 485,777	144,020,092	3.65	81,608	3,693	19,450	104,751	225	23,524,248	6.12

See footnotes at end of table.

TABLE 34. - PRODUCTION, VALUE, EMPLOYMENT, DAYS ACTIVE, MAN-DAYS, AND OUTPUT PER MAN PER DAY AT BITUMINOUS-COAL AND LIGNITE MINES IN THE UNITED STATES, BY STATES AND COUNTIES, IN 1946 - Continued

(Exclusive of mines producing less than 1,000 tons)

County	Disposition of coal produced (net tons)					Average value per ton 3/	Average number of employees				Average number of days mines were active	Number of man-days worked	Average tons per man per day
	Loaded for shipment by rail or water 1/	Shipped by truck or wagon (excluding coal used by mine employees)	Used by mine employees, taken by locomotive tenders at tipple, or other uses at mine 2/	Used at mine for power and heat or made into beehive coke at mine	Total quantity		Underground	Surface		Total			
								In strip pits	All others				
WYOMING													
Campbell	152,959	25,920	666	9,292	188,837	$1.38	---	22	36	58	225	13,066	14.45
Carbon	1,035,521	14,867	4,032	24,386	1,078,806	2.93	248	74	142	464	217	100,868	10.70
Converse	---	13,627	---	---	13,627	2.67	2	5	1	8	221	1,770	7.70
Fremont	---	8,099	58	12	8,169	4.03	12	---	5	17	208	3,544	2.31
Hot Springs	52,120	20,117	50	10	72,297	4.75	91	---	34	125	144	17,975	4.02
Johnson	---	5,069	300	360	5,729	2.21	3	---	2	5	234	1,169	4.90
Lincoln	387,598	6,181	1,598	160	395,537	3.50	258	---	65	323	195	62,843	6.29
Sheridan	1,292,257	34,704	2,153	1,180	1,330,294	2.21	228	87	107	422	226	95,176	13.98
Sweetwater	4,434,908	15,503	24,981	63,226	4,538,618	3.24	2,428	---	674	3,102	218	675,271	6.72
Uinta	---	2,550	6	14	2,570	3.35	5	---	---	5	192	962	2.67
Total Wyoming	7,355,363	146,637	33,844	4/ 98,640	7,634,484	3.00	3,275	188	1,066	4,529	215	972,644	6/ 7.85
UNITED STATES													
Total United States	475,257,057	42,730,384	8,896,918	7,037,209	533,922,068	$3.44	296,030	25,408	74,996	396,434	214	84,719,686	6.30

1/ Includes coal loaded at mine directly into railroad cars or river barges, hauled by truck to railroad siding for shipment by rail, and hauled by truck to waterway for shipment by water.

2/ Includes coal transported from mine to point of use by conveyor or tram.

3/ Value received or charged for coal, f.o.b. mine, including selling cost. (Includes a value for coal not sold but used by producer, such as mine fuel and coal coked [not coke] as estimated by producer at average prices that might have been received if such coal had been sold commercially.)

4/ No coal was "Made into beehive coke at mine."

5/ Includes 105,297 tons "Made into beehive coke at mine" in Las Animas County.

6/ Output obtained chiefly from strip pits and by use of mechanical loading devices, in which types of operation production per man per day is large.

7/ Output obtained chiefly from strip pits in which the production per man per day is large.

8/ Includes 133,500 tons "Made into beehive coke at mine" in Pike County.

9/ In North Dakota some lignite made into briquets is included in "Other uses at mine."

10/ Includes coal "Made into beehive coke at mine" in the following counties: Fayette, 3,096,598; Indiana, 223,033; and Westmoreland, 1,025,730 - Grand total, 4,345,361.

11/ Includes 12,075 tons "Made into beehive coke at mine" in Carbon County.

12/ Output is obtained chiefly by use of mechanical devices in which type of operation production per man per day is large.

13/ Includes 271,243 tons "Made into beehive coke at mine" in Wise County.

14/ Includes coal "Made into beehive coke at mine" in the following counties: Fayette, 54,647; Nicholas, 29,808; and Preston, 134,633 - Grand total, 219,088 tons.

STATISTICAL SUMMARY OF LIGNITE IN 1946 1/

According to reports received by the Bureau of Mines, United States Department of the Interior, 2,667,619 net tons of lignite were produced in the United States in 1946, compared with 2,668,310 tons in 1945. Neither of these figures include tonnage from small mines producing less than 1,000 tons. North Dakota, the chief producer, accounted for 96 percent of the total output; Texas, Montana, and South Dakota produced the remaining 4 percent. The average value per ton increased from $1.55 in 1945 to $1.68 in 1946. The number of men employed was 752 and the average output per man per day, based on calculated man-days, was 15.00 tons. Compared with other coal mining in the United States, the output per man per day in the lignite industry is high, because a large part of the production (83 percent in 1946) is recovered from strip pits where the average output per man per day is much higher than in underground mines. Of the 2,201,579 tons of lignite recovered from strip pits in 1946, 97 percent came from pits in North Dakota. The output from stripping operations in Montana, South Dakota, and Texas totaled only 74,009 tons. The number of men employed in stripping operations totaled 508 with an average output per man per day of 18.90 tons.

The figures are based on reports received from 59 mines producing 1,000 tons or more annually, seven of which accounted for 81 percent of the total lignite mined; three mines accounted for 8 percent; and fifty mines, 11 percent.

According to the Federal Power Commission, 1,120,486 tons of lignite were consumed in generating electric energy in 1946; the West North Central States, consuming 787,595 tons; the West South Central States, 772 tons; and the Mountain States, 332,119 tons, a large part of which was subbituminous.

The Bureau of Mines wishes to thank the lignite operators for their cooperation without which this report would not have been possible. The data on individual operations are voluntary and confidential as is customary in the statistical surveys of the Bureau.

1/ Compiled by J. A. Corgan and M. I. Cooke.

TABLE 35. - Summary of production, value, men employed, days operated, man-days of labor, and output per man per day at lignite mines in the United States in 1946, by States 1/

	Montana 2/	North Dakota	South Dakota	Texas	Total
Production (net tons):					
Loaded at mines for shipment	---	2,097,317	1,680	55,604	2,154,601
Commercial sales by truck or wagon	40,013	373,631	15,266	---	428,910
Used by employees, taken by locomotives at tipple, and other uses	---	3/ 67,981	---	374	68,355
Used at mine for power and heat	---	15,753	---	---	15,753
Total production: 1946	40,013	2,554,682	16,946	55,978	2,667,619
1945	41,597	2,522,319	24,445	79,949	2,668,310
Value:					
Totals: 1946	$105,331	$4,301,603	$36,362	$46,454	$4,489,750
1945	$99,000	$3,924,000	$53,000	$68,000	$4,144,000
Average per ton: 1946	$2.63	$1.68	$2.15	$0.83	$1.68
1945	$2.38	$1.56	$2.17	$0.85	$1.55
Number of employees:					
Underground	27	156	---	---	183
Surface (including strip pits)	12	518	14	25	569
Total employees: 1946	39	674	14	25	752
1945	40	757	15	26	838
Average number of days mines operated:					
1946	175	241	169	248	236
1945	196	226	259	158	223
Man-days of labor: 1946	6,837	162,388	2,364	6,200	177,789
Average output (tons) per man per day: 1946	5.85	15.73	7.17	9.03	15.00

1/ Exclusive of small mines producing less than 1,000 tons.
2/ Includes output from Custer, Dawson, McCone, Richland, Roosevelt, and Sheridan Counties.
3/ Includes some lignite made into briquets.

TABLE 36. - Production, value, men employed, days operated, man-days of labor, and output per man per day at lignite mines in the United States in 1946, by States and counties

MONTANA

County	Total production (net tons)	Value		Total number of employees	Man days of labor	Average number of days mine operated	Average tons per man per day
		Total	Average per ton				
Custer	13,281	$36,403	$2.74	11	1,690	154	7.86
Dawson	2,560	6,400	2.50	4	720	180	3.56
McCone	1,079	2,838	2.63	4	256	64	4.21
Richland	8,022	21,990	2.74	5	1,250	250	6.42
Roosevelt	2,320	9,280	4.00	5	900	180	2.58
Sheridan	12,751	28,420	2.23	10	2,021	202	6.31
Total Montana	40,013	105,331	2.63	39	6,837	175	5.85
NORTH DAKOTA							
Adams	68,043	$131,417	$1.93	24	4,962	207	1/ 13.71
Bowman	6,455	14,620	2.26	8	666	83	1/ 9.69
Burke	374,734	610,736	1.63	72	19,137	266	1/ 19.58
Burleigh	5,777	16,705	2.89	7	1,676	239	3.45
Divide	255,512	316,477	1.24	45	10,221	227	1/ 25.00
Dunn	3,750	9,000	2.40	4	840	210	4.46
Golden Valley	1,140	2,850	2.50	4	500	125	2.28
Grant	17,281	43,103	2.49	10	1,400	140	1/ 12.34
Hettinger	16,679	40,460	2.43	14	2,447	175	6.82
McKenzie	4,004	10,979	2.74	6	873	146	4.59
McLean	40,191	81,281	2.02	39	5,078	130	7.91
Mercer	1,070,018	1,661,926	1.55	233	61,490	264	1/ 17.40
Morton	26,734	57,578	2.15	19	3,646	192	7.33
Oliver	4,000	10,000	2.50	5	650	130	6.15
Stark	97,746	364,963	3.73	42	13,579	323	7.20
Ward	539,395	868,727	1.61	121	31,886	264	1/ 16.92
Williams	23,223	60,781	2.62	21	3,337	159	6.96
Total North Dakota	2,554,682	4,301,603	1.68	674	162,388	241	15.73
SOUTH DAKOTA							
Corson	1,370	$3,525	$2.57	4	258	65	5.31
Dewey	13,029	27,361	2.10	7	1,620	231	8.04
Perkins	2,547	5,476	2.15	3	486	162	5.24
Total South Dakota	16,946	36,362	2.15	14	2,364	169	7.17
TEXAS							
Total Texas: Milam	55,978	$46,454	$0.83	25	6,200	248	1/ 9.03

1/ Output is obtained chiefly from strip pits in which the production per man per day is large.

TABLE 37. - Number and production of lignite mines in the United States in 1946, classified by size of output.

Class	Mines		Production		
			Net tons		
	Number	Percent	Total	Average per mine	Percent of total
1. (100,000 tons and over)----	6	10.2	2,167,604	361,267	81.2
2. (50,000 and under 100,000)-	3	5.1	201,645	67,215	7.6
3. (10,000 and under 50,000)--	10	16.9	178,292	17,829	6.7
4. (Under 10,000 tons)--------	40	67.8	120,078	3,002	4.5
Total----------------	59	100.0	2,667,619	45,214	100.0

TABLE 38. - Lignite loaded for shipment in 1946, by individual railroads, as reported by operators, in net tons

Railroads	State	Quantity
Great Northern----------------------------	North Dakota	577,864
Chicago, Milwaukee, St. Paul & Pacific------	North Dakota	39,351
	South Dakota	1,680
Northern Pacific---------------------------	North Dakota	968,509
Minneapolis, St. Paul & Sault Ste. Marie----	North Dakota	511,593
Rockdale, Sandow & Southern----------------	Texas	55,604
Total--------------------------------------	------------------	2,154,601

TABLE 39. - Summary of stripping operations that produced lignite in the United States in 1946, by States

	Montana	North Dakota	South Dakota	Texas	Total
Number of strip pits 1/------------------------	1	28	3	1	33
Number of shovels, dragline excavators, and coal-loading machines 2/-------------------	1	45	3	3	52
Coal produced by stripping--------------------	1,079	2,127,576	16,946	55,978	2,201,579
Total value at mines--------------------------	$2.838	$3,401,432	$36,362	$46,454	$3,487,086
Average value per ton-------------------------	$2.63	$1.60	$2.15	$0.83	$1.58
Number of employees:					
In strip pits---------------------------	4	255	14	10	283
All others------------------------------	-----------	210	------------	15	225
Total-----------------------------	4	465	14	25	508
Average number of days mines operated---------	64	232	169	248	229
Man-days of labor-----------------------------	256	107,668	2,364	6,200	116,488
Average tons per man per day------------------	4.21	19.76	7.17	9.03	18.90

1/ Includes some pits in which stripping is done by hand.
2/ In some cases the same equipment was used for stripping or excavating and for loading coal; this duplication has been eliminated. In some cases coal was excavated by machine and loaded by hand.

TABLE 40. - Lignite mined by different methods in the United States in 1946, by States, in net tons

	Montana	North Dakota	South Dakota	Texas	Total
From underground workings:					
Shot off the solid-------	38,934	33,875	------------	-----------	72,809
Cut by machines 1/-------	----------	393,231	------------	-----------	393,231
Total underground------	38,934	427,106	------------	-----------	466,040
From strip pits------------	1,079	2,127,576	16,946	55,978	2,201,579
Grand total production-	40,013	2,554,682	16,946	55,978	2,667,619

1/ A total of 7 machines was used--2 "permissible" and 5 other types.

IMPORTS AND EXPORTS [4]

TABLE 41. - BITUMINOUS COAL [1] IMPORTED FOR CONSUMPTION IN THE UNITED STATES, 1944-46, BY COUNTRIES AND CUSTOMS DISTRICTS, IN NET TONS

Country	1944	1945	1946
North America:			
Canada	631,988	466,565	434,130
Mexico	—	1	—
South America:			
Chile	68	—	—
Colombia	16	—	—
Peru	—	7	—
Europe:			
Poland and Danzig	—	—	538
U.S.S.R.	370	—	—
United Kingdom	1,221	577	—
Oceania:			
Australia	—	318	—
New Zealand	—	2	—
Africa:			
Union of South Africa	26	3	12
	633,689	467,473	434,680
Customs District			
Alaska	19,930	—	2,929
Chicago	—	2	—
Dakota	340	491	548
Duluth and Superior	166	327	135
Los Angeles	68	—	—
Maine and New Hampshire	108,709	105,020	133,039
Michigan	(2)	84	44
Montana and Idaho	430,734	276,055	242,668
New York	1,263	731	550
Oregon	370	—	—
Philadelphia	866	—	—
Pittsburgh	—	8	—
St. Lawrence	—	97	925
San Francisco	—	16	—
Vermont	—	786	1,528
Virginia	—	151	—
Washington	71,243	83,643	52,164
Wisconsin	—	62	150
	633,689	467,473	434,680

[1] Includes slack, culm, and lignite.
[2] Less than 1 ton.

TABLE 42. - EXPORTS OF BITUMINOUS COAL TO CANADA AND MEXICO, THE WEST INDIES AND CENTRAL AMERICA, AND "OVERSEAS" DESTINATIONS, 1944-46, IN THOUSANDS OF NET TONS

Country	1944	1945	1946
Canada and Mexico	24,369	21,581	21,882
West Indies and Central America [1]	356	295	253
"Overseas" (all other countries):			
Newfoundland, Miquelon, Bermuda, Greenland and Iceland	157	191	160
South America	580	1,080	1,723
Europe	218	3,916	16,065
Asia	(2)	(2)	201
Africa	352	873	878
Oceania	—	11	37
Total "Overseas"	1,307	6,071	19,064
Grand total	26,032	27,947	41,199

[1] Includes Bahamas and Panama.
[2] Less than 1,000 net tons.

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[4] Figures on imports and exports compiled by M. B. Price of the Bureau of Mines, from records of the U. S. Department of Commerce.

TABLE 43. - BITUMINOUS COAL EXPORTED FROM THE UNITED STATES, 1944-46, BY COUNTRIES, IN NET TONS 1/

Country	1944	1945	1946
North America:			
Bermuda	6,873	8,234	2,555
Canada	24,366,929	21,578,281	21,879,705
Central America:			
British Honduras	38	424	76
Costa Rica	2,551	26	62
El Salvador	96	71	77
Guatemala	172	190	253
Honduras	619	400	262
Nicaragua	48	3	10
Panama:			
Canal Zone	53,626	25,667	9,554
Republic of	13	12	50
Greenland	1,170	940	4,110
Mexico	2,981	2,629	1,688
Newfoundland and Labrador	149,050	181,663	153,212
West Indies:			
British:			
Barbados	3,572	2,006	1,269
Jamaica	45,741	38,102	65,604
Trinidad and Tobago	73,739	110,252	68,038
Other British	4,002	2,318	24
Cuba	148,559	99,706	99,798
Curacao (N. W. I.)	347	971	63
Dominican Republic	1,985	971	3,175
French	20,469	13,661	5,504
Haiti	36	35	---
	24,882,616	22,066,562	22,295,089
South America:			
Argentina	196,165	313,784	486,809
Bolivia	26,571	5,240	28,211
Brazil	289,434	665,112	1,083,379
Chile	15,991	6,359	17,372
Falkland Islands	94	106	---
Surinam	4,345	2,218	577
Uruguay	46,944	86,879	105,458
Other South America	211	821	787
	579,755	1,080,519	1,722,593
Europe:			
Azores	---	4,698	1,608
Belgium and Luxembourg	---	436,644	878,373
Denmark	---	199,244	1,059,596
France	---	624,378	5,092,481
Gibraltar	---	144,603	9,330
Greece	---	37,351	91,676
Italy	---	1,102,351	4,687,950
Netherlands	---	433,773	1,607,383
Norway	---	353,610	744,277
Portugal	213,370	344,746	455,024
Spain	4,507	112	---
Sweden	---	134,496	860,854
Switzerland	---	98,787	307,586
U. S. S. R.	300	---	---
United Kingdom	49	1,245	---
Other Europe	---	---	268,481
	218,226	3,916,038	16,064,619
Asia:			
British Malaya	---	---	58,940
China	---	---	88,321
French Indo-China	---	---	14,494
Hong Kong	---	---	39,696
Other Asia	35	26	11
	35	26	201,462
Africa:			
Algeria	279,480	561,830	551,350
British West Africa	---	47,220	---
Canary Islands	20,748	12,555	---
Cape Verde Islands	13,962	7,620	25,685
Egypt	1	---	85,399
French West Africa	---	67,229	40,505
Madeira Islands	9,073	14,123	27,838
Morocco:			
French	---	76,348	47,031
Spanish	25,693	15,725	---
Tunisia	2,753	70,245	99,931
Other Africa	6	9	5
	351,716	872,904	877,744
Oceania	---	10,555	37,487
	26,032,348	27,946,604	41,198,994

1/Amounts stated do not include fuel or bunker coal loaded on vessels engaged in foreign trade, which aggregated 1,559,335 tons in 1944, 1,784,956 tons in 1945, and 1,380,514 tons in 1946.

TABLE 44. - BITUMINOUS COAL EXPORTED FROM THE UNITED STATES, 1944-46, BY CUSTOMS DISTRICTS, IN NET TONS

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Customs district	1944	1945	1946
North Atlantic:			
Maine and New Hampshire	11,009	12,087	33,495
Massachusetts	2	---	1,691
New York	26,164	36,027	701,602
Philadelphia	307,671	1,160,647	2,482,437
Rhode Island	---	---	73
South Atlantic:			
Maryland	168,541	2,264,127	6,459,560
North Carolina	---	---	4,501
South Carolina	---	294,753	1,369,553
Virginia	1,021,447	1,643,106	4,428,458
Gulf Coast:			
Florida	286,731	982,251	1,363,403
Galveston	---	89,128	633,911
Mobile	57,716	347,207	809,566
New Orleans	25,910	19,650	20,129
Sabine	---	---	531,302
Mexican border:			
Arizona	428	338	264
El Paso	1,612	277	58
Laredo	1	21	27
Pacific Coast:			
Los Angeles	394	---	334,727
Oregon	---	---	138,019
San Diego	82	164	92
San Francisco	300	14	15
Washington	640	1,020	92,037
Northern border:			
Buffalo	1,696,135	1,413,882	1,580,304
Chicago	1,582,563	583,981	1,199,033
Dakota	7,478	15,555	30,360
Duluth and Superior	365,798	273,868	300,414
Michigan	1,821,036	2,297,837	2,369,744
Montana and Idaho	---	9	48
Ohio	12,094,748	10,825,722	10,433,093
Rochester	3,318,098	3,155,747	2,899,833
St. Lawrence	3,227,283	2,523,021	2,876,940
Vermont	5,049	1,263	2,517
Wisconsin	125	468	538
Miscellaneous:			
Alaska	5,387	78	413
Hawaii	---	---	70,346
Minnesota	---	---	5,984
Pittsburgh	---	4,356	3,381
Puerto Rico	---	---	4
St. Louis	---	---	12,298
	26,032,348	27,946,604	1/ 41,198,994

1/Includes 8,824 tons, representing export shipments (except by air) individually valued under $25, data for which are not separately classified by customs districts after January 1, 1946.

TABLE 45. - SHIPMENTS OF BITUMINOUS COAL TO NONCONTIGUOUS TERRITORIES, 1944-46

Territory	1944		1945		1946	
	Net tons	Value	Net tons	Value	Net tons	Value
Alaska:						
Anthracite	39,964	$491,412	36,599	$464,053	7,865	$111,451
Bituminous						
Hawaii	429	13,965	567	17,586	259	7,174
Puerto Rico	11,428	73,333	8,220	50,204	11,526	73,121
Virgin Islands	---	---	32,168	218,066	53,771	361,170

TABLE 46. - WORLD PRODUCTION OF COAL AND LIGNITE, 1939-46, BY COUNTRIES, IN THOUSANDS OF METRIC TONS 1/

(Compiled by B. B. Mitchell)

30421

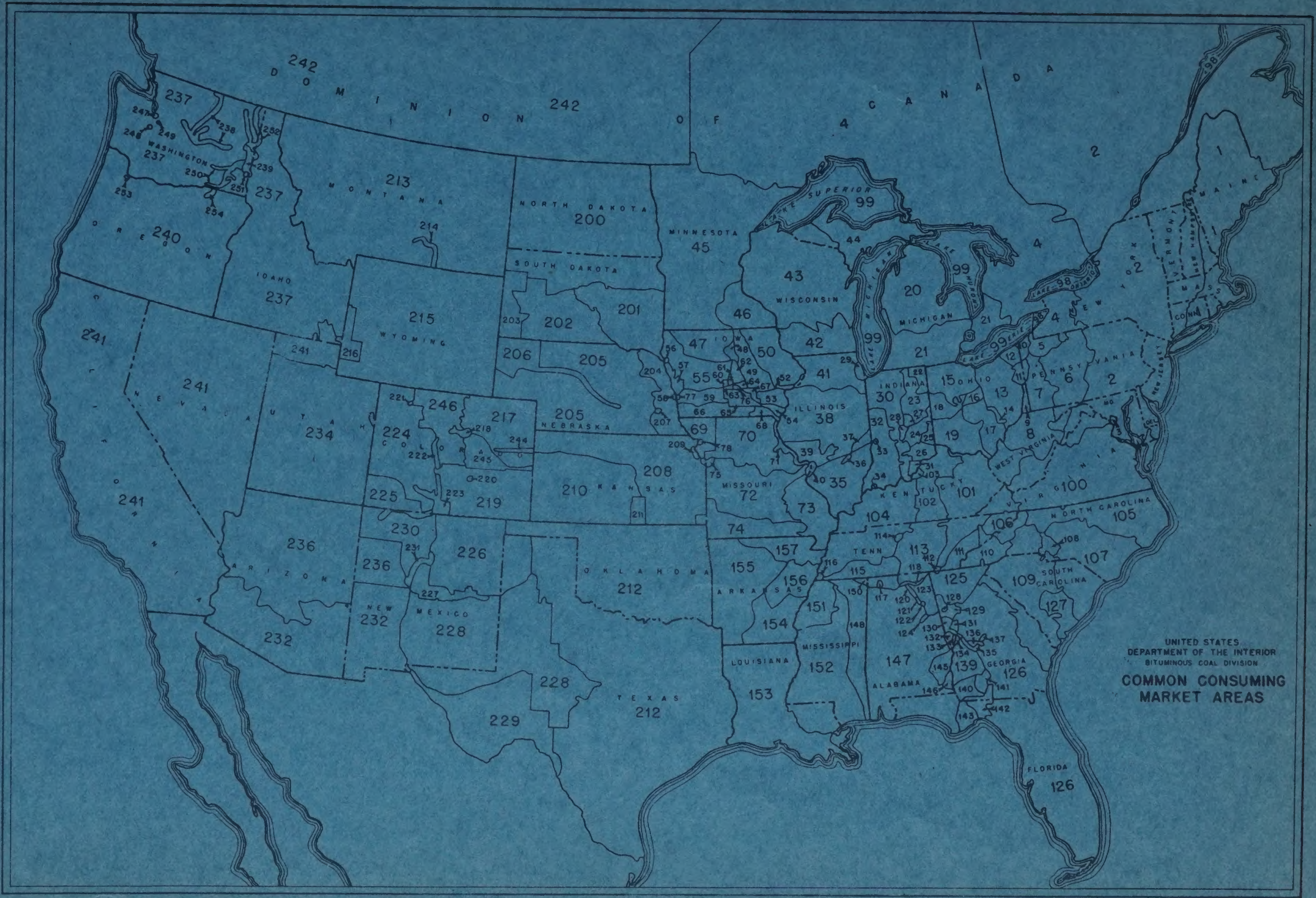
Country 1/	1939	1940	1941	1942	1943	1944	1945	1946
North America:								
Canada:								
Coal	10,985	12,638	12,872	13,018	11,591	14,201	13,584	14,765
Lignite	3,094	3,298	3,662	4,096	4,610	1,245	1,391	1,381
Greenland	(2)	6	7	5	7	8	7	8
Mexico	628	816	856	914	1,025	904	915	(3)
United States:								
Anthracite (Pennsylvania)	46,708	46,706	51,136	54,728	55,015	57,789	49,835	54,891
Bituminous	355,445	415,336	463,908	525,948	532,903	559,750	521,582	481,943
Lignite	2,760	2,666	2,518	2,659	2,494	2,317	2,421	2,420
South America:								
Argentina 4/	(5)	(5)	(5)	5	8	9	(3)	(3)
Brazil	1,047	1,049	1,110	1,354	1,556	1,433	1,501	6/ 1,252
Chile	1,609	1,639	1,717	1,782	2,032	2,047	1,827	1,740
Colombia	349	521	403	415	476	499	(3)	(3)
Peru	108	153	117	150	187	173	201	230
Venezuela	3	5	6	9	11	12	7	4
Europe:								
Albania: Lignite 6/	16	20	20	20	10	5	5	(3)
Austria:								
Coal	217	228	226	225	214	196	72	104
Lignite	3,533	3,614	3,537	3,523	3,646	3,674	2,066	2,330
Belgium	29,843	25,599	26,608	24,929	23,743	13,505	15,718	22,779
Bulgaria:								
Coal	164	188						
Lignite	2,134	2,700	2,256	2,781	6/ 2,000	2,327	2,868	2,886
Czechoslovakia:								
Coal	18,691	20,820	20,930	22,635	24,500	23,159	7/ 6,019	14,153
Lignite	18,614	21,476	21,623	23,316	26,750	26,112	7/ 8,238	19,417
Denmark: Lignite	---	200	1,000	1,800	2,600	2,200	2,320	2,300
Eire	120	118	155	167	186	206	216	129
Faroe Islands: Lignite	8	(2)	(2)	(2)	(2)	(3)	(3)	(3)
France:								
Coal	49,147	39,323	41,849	41,869	10,531	25,241	35,061	49,500
Lignite	1,102	1,661	2,008	1,958	1,896	1,336		
Germany:								
Coal	187,945	240,101	243,607	251,970	(2)	(3)	(3)	6/ 8/51,066
Lignite	210,939	223,946	234,996	244,643	(2)	(3)	(3)	6/ 8/63,027
Greece: Lignite	139	250	180	365	370	190	70	125
Hungary:								
Coal 9/	1,107	1,207	1,301	1,250	1,376	6/ 9,000	4,021	722
Lignite 9/	9,518	10,306	11,298	11,720	11,296			5,630
Italy:								
Coal	2,024	2,282	2,393	2,522	439	(3)	612	1,180
Lignite	1,099	2,109	2,030	2,306	1,934	(3)	709	1,496
Netherlands:								
Coal	12,861	12,145	13,356	12,330	12,497	8,313	5,085	8,314
Lignite	197	199	199	281	383	243	130	499
Poland:								
Coal	10/ 65,536	10/ 77,077	10/ 76,343	10/ 83,972	10/ 91,362	10/ 87,389	27,366	47,288
Lignite	(2)	(2)	(2)	(2)	(2)	(3)	(3)	857
Portugal:								
Coal	299	369	435	438	403	426	436	6/ 369
Lignite	35	64	84	108	106	127	146	135
Rumania:								
Coal	286	297	264	285	306	202	6/ 125	(3)
Lignite	2,179	2,384	2,195	2,367	2,604	2,069	6/ 1,625	(3)
Spain:								
Coal	6,606	8,862	8,763	9,257	9,591	10,485	10,636	10,749
Lignite	194	569	793	1,106	1,112	1,202	1,305	1,330
Svalbard (Spitsbergen)	625	565	(2)	(2)	(2)	(3)	(3)	11/ 63
Sweden	444	498	557	582	557	570	615	(3)
Switzerland:								
Coal	3	8	72	184	157	71	311	179
Lignite	---	---	8	27	75	74		
U. S. S. R.:								
Coal	134,500	148,700	146,800	6/ 90,000	6/ 131,400	6/ 118,000	6/ 145,000	6/ 160,000
Lignite	(2)	15,900	(2)	(2)	(2)	(3)	(3)	(3)

TABLE 46. - WORLD PRODUCTION OF COAL AND LIGNITE, 1939-46, BY COUNTIES, IN THOUSANDS OF METRIC TONS 1/ - Continued

30421

Country 1/	1939	1940	1941	1942	1943	1944	1945	1946
Europe - Continued.								
United Kingdom:								
Great Britain	235,051	227,898	209,656	206,901	197,615	184,322	172,347	178,532
Northern Ireland:								
Coal	(5)	(5)	(5)	3	(5)	(5)	(5)	(3)
Lignite	---	(5)	(5)	1	1	2	3	(3)
Yugoslavia:								
Coal	444	12/ 3,170	7,310	12/13/ 1,160	(2)	(3)	(3)	(3)
Lignite	5,622							
Asia:								
British Borneo	(5)	(2)	(2)	(2)	(2)	(3)	(3)	(3)
China:								
China (including Manchuria):								
Coal	38,210	46,481	58,426	65,267	14/ 5,995	14/ 4,425	(3)	(3)
Lignite	331	346	397	419	(2)	(3)	(3)	(3)
Formosa (Taiwan)	(2)	(2)	2,886	2,311	(2)	(3)	(3)	6/ 1,200
Federated Malay States	448	794	(2)	(2)	(2)	(3)	(3)	(3)
India	28,214	29,860	29,937	29,906	25,921	26,546	29,635	29,747
Indochina:								
Coal	2,588	2,470	2,329	1,243	1,020	537	(3)	(3)
Lignite	27	30						
Iran 15/	(2)	75	92	90	82	69	108	(3)
Japan:								
Japan proper: 16/								
Coal	52,409	57,309	55,602	54,179	55,539	49,335	22,371	22,500
Lignite	195	298	408	1,607	2,876	2,304	1,643	2,319
Karafuto	(2)	(2)	(2)	(2)	(2)	(3)	(3)	(3)
Korea (Chosen)	4,481	(2)	(2)	(2)	(2)	7,619	(3)	(3)
Netherlands Indies	1,781	2,009	17/ 778	(2)	(2)	(3)	(3)	73
Philippine Islands	47	(2)	(2)	(2)	(2)	(3)	(3)	20
Syria and Lebanon:								
Lignite	1	2	8	7	1	2	2	(3)
Turkey:								
Coal	2,696	3,019	3,020	2,510	3,166	3,560	3,720	3,830
Lignite	151	219	264	409	589	699	721	508
U. S. S. R.:								
Coal	(2)	(2)	(2)	(2)	(2)	(3)	(3)	(3)
Lignite								
Africa:								
Algeria:								
Coal	19	55	80	148	117	120	162	215
Lignite			3	7	1	1	(3)	(3)
Belgian Congo: Coal	27	23	30	43	69	49	45	(3)
Madagascar	---	---	1	2	1	2	3	(3)
Morocco, French	116	143	139	119	102	134	179	222
Nigeria	311	313	(2)	(2)	(2)	640	679	617
Portuguese East Africa	8	20	17	7	13	16	12	(3)
Southern Rhodesia	1,118	1,291	1,412	1,561	1,779	1,808	1,669	1,613
Tunisia: Lignite	2	23	102	141	41	66	69	95
Union of South Africa	16,890	17,176	18,337	20,408	20,561	22,987	23,554	23,635
Oceania:								
Austrilia:								
New South Wales	11,376	9,703	11,955	12,433	11,714	11,280	10,402	14,099 5,487
Queensland	1,339	1,306	1,477	1,663	1,727	1,686	1,661	
Tasmania	99	84	111	137	148	146	151	
Victoria:								
Coal	371	272	332	318	292	262	251	
Lignite	3,710	4,347	4,639	5,013	5,173	5,097	5,538	
Western Australia	566	548	566	591	540	567	552	
New Zealand:								
Coal	1,061	1,163	1,199	1,194	1,157	1,085	980	974
Lignite	1,319	1,393	1,483	1,529	1,676	1,766	1,899	1,865
Total, all grades	1,647,000	1,799,000	1,854,000	1,883,000	1,683,000	(3)	(3)	(3)
Lignite (total of items shown above)	287,000	302,000	317,000	323,000	279,000	(3)	(3)	(3)
Bituminous and anthracite (by subtraction)	1,360,000	1,497,000	1,537,000	1,560,000	1,404,000	(3)	(3)	(3)

1/ Coal is also mined in Italian East Africa, but production figures are not available.
2/ Estimate included in total.
3/ Data not yet available.
4/ In addition, the following quantities of asphaltite were produced and used as solid fuel in the years: 1939, 1,320; 1940, 9,117; 1941, 16,646; 1942, 56,387; 1943, 105,625; 1944, 98,600 tons; data for later years are not available.
5/ Production of less than 1,000 tons.
6/ Estimate.
7/ May to December, inclusive.
8/ Western Germany.
9/ Includes Northern Territories and Sub-Carpathia; in addition, beginning in 1941, includes Eastern Hungary and Transylvania; and beginning in 1942 includes Southern Territories.
10/ Includes that part of Germany which is under Polish Administration (east of the Oder and Misse Rivers).
11/ Exports.
12/ Estimated production of Croatia only.
13/ January to June, inclusive.
14/ Free China.
15/ Fiscal year ended March 20 of year stated.
16/ Preliminary and subject to revision.
17/ Production of Government mines only.


UNITED STATES
DEPARTMENT OF THE INTERIOR
BITUMINOUS COAL DIVISION

COMMON CONSUMING MARKET AREAS

DOMINION OF CANADA
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WASHINGTON
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OREGON
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IDAHO
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MONTANA
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WYOMING
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NORTH DAKOTA
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SOUTH DAKOTA
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NEBRASKA
MINNESOTA
45
WISCONSIN
43
44
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MICHIGAN
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21
99
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
NEW YORK
VERMONT
NEW HAMPSHIRE
MAINE
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MASS
CONN
NEW JERSEY
PENNSYLVANIA
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OHIO
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IOWA
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ILLINOIS
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KENTUCKY
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WEST VIRGINIA
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VIRGINIA
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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

J. A. KRUG, Secretary James Boyd
Director

For release December 29, 1947.

Mineral Market Report
MMS No. 1559

PHOSPHATE ROCK IN FIRST HALF OF 1947

Total mine production of phosphate rock in the United States in the first half of 1947, according to reports of producers to the Bureau of Mines, United States Department of the Interior, was 4,667,220 long tons. Phosphate rock sold or used in the first half of 1947, 4,638,158 long tons, was more than a million tons greater than in the corresponding period of 1946; the value, $23,986,736, was over ten million dollars greater. The average value of the phosphate rock sold or used increased nearly a dollar per ton, from $4.24 in the first half of 1946 to $5.17 in the similar period of 1947, increases being reported in all classes of rock except soft rock from Florida. Total stocks reported in producers' hands on June 30, 1947, were considerably larger than at the end of the first six months of 1946.

In the first half of 1947, phosphate rock was mined in Florida, Tennessee, Idaho, and Montana, and apatite in Virginia. Florida was the leading shipper, as usual, its marketed production increasing to more than four times that of its nearest competitor, Tennessee. Shipments of Florida land pebble and soft rock increased, but there was a considerable decline in the shipments of the Florida hard rock phosphate. The average value of the shipments of soft rock was the same as in the corresponding period of 1946, but there were marked increases in the average values of the shipments of land pebble and hard rock. The total values of the shipments of land pebble and soft rock increased; that of hard rock decreased. The quantity of Tennessee rock sold or used in the first half of 1947 was greater than in the corresponding period of 1946, and the value was more than half a million dollars greater. Idaho showed a tremendous increase in the quantity of phosphate rock sold or used in the first six months of 1947 over the January-to-June period of 1947, jumping from 109,658 long tons in the first half year of 1946 to 619,926 tons in the same period of 1947. The average value increased from $5.42 to $5.84, and the total value was over six times as great as in the first six months of 1946. Montana shipments in the first six months of 1947 were considerably larger than those of the corresponding period of 1946, reaching 106,185 long tons with a total value of $687,085, and an average value of $6.47

Prepared by Bertrand L. Johnson and E. M. Tucker, under the supervision of G. W. Josephson, Acting Chief, Nonmetal Economics Division, Economics and Statistics Branch.

Salient statistics of the phosphate-rock industry in the United States,
January-June 1946 and 1947

	1946				1947			
	Long tons		Value at mines		Long tons		Value at mines	
	Phosphate rock	P_2O_5 content	Total	Average	Phosphate rock	P_2O_5 content	Total	Average
Production (mined).........	3,283,179	1,066,615	(1)	(1)	4,667,220	1,502,994	(1)	(1)
Sold or used by producers:								
Florida:								
Land pebble..............	2,246,595	754,783	$8,492,876	$3.78	3,034,064	1,012,885	$14,952,073	$4.93
Soft rock................	49,025	10,229	192,034	3.92	57,168	11,722	224,118	3.92
Hard rock................	55,432	20,182	414,566	7.48	40,130	14,620	320,886	8.00
Total Florida	2,351,052	785,194	9,099,476	3.87	3,131,362	1,039,227	15,497,077	4.95
Tennessee 2/	3/726,149	3/210,552	3/3,645,846	3/5.02	780,685	222,930	4,182,501	5.36
Idaho....................	109,658	34,424	594,012	5.42	619,926	192,995	3,620,073	5.84
Montana..................	84,241	27,250	539,317	6.40	106,185	33,256	687,085	6.47
Virginia.................	(3)	(3)	(3)	(3)	---	---	---	---
Total, United States...	3,271,100	1,057,420	13,878,651	4.24	4,638,158	1,488,408	23,986,736	5.17
Stocks in producers' hands, June 30:								
Florida..................	503,000	169,000	(1)	(1)	681,000	224,000	(1)	(1)
Tennessee 2/ 3/ 4/........	331,000	91,000	(1)	(1)	355,000	100,000	(1)	(1)
Other....................	19,000	6,000	(1)	(1)	30,000	9,000	(1)	(1)
Total stocks 4/.......	853,000	266,000	(1)	(1)	1,066,000	333,000	(1)	(1)

1/ Figures not available.
2/ Includes brown-rock matrix of sinter grade and sintered brown rock.
3/ Virginia included with Tennessee.
4/ Does not include plant stocks of washer-grade matrix.